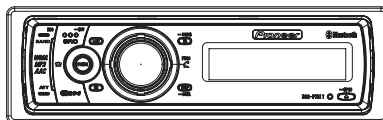


Service Manual



DEH-P75BT/XN/ES

ORDER NO.
CRT3627

HIGH POWER CD/MP3/WMA/AAC PLAYER WITH BLUETOOTH WIRELESS TECHNOLOGY, RDS TUNER AND MULTI-CD CONTROL

DEH-P75BT /XN/ES

HIGH POWER CD/MP3/WMA/AAC PLAYER WITH BLUETOOTH WIRELESS TECHNOLOGY, FM/AM TUNER AND MULTI-CD CONTROL

DEH-P7850BT /XN/ES

This service manual should be used together with the following manual(s):

Model No.	Order No.	Mech.Module	Remarks
CX-3164	CRT3583	S10.5COMP1	CD Mech. Module : Circuit Descriptions, Mech. Descriptions, Disassembly



For details, refer to "Important Check Points for Good Servicing".

SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

● Safety Precautions for those who Service this Unit.

- When checking or adjusting the emitting power of the laser diode exercise caution in order to get safe, reliable results.

Caution:

1. During repair or tests, minimum distance of 13 cm from the focus lens must be kept.
2. During repair or tests, do not view laser beam for 10 seconds or longer.

CAUTION:

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

CAUTION

This product contains a laser diode of higher class than 1. To ensure continued safety, do not remove any covers or attempt to gain access to the inside of the product.

Refer all servicing to qualified personnel.

The following caution label appears on your unit.

Location: on the bottom of the unit



En

WARNING!

The AEL (accessible emission level) of the laser power output is less than CLASS 1 but the laser component is capable of emitting radiation exceeding the limit for CLASS 1.

A specially instructed person should do servicing operation of the apparatus.

Laser diode characteristics

Wave length : 785 to 814 nm

Maximum output : 1 190 μ W(Emitting period : unlimited)

Additional Laser Caution

Transistors Q101 in PCB drive the laser diodes.

When Q101 is shorted between their terminals, the laser diodes will radiate beam.

If the top cover is removed with no disc loaded while such short-circuit is continued, the naked eyes may be exposed to the laser beam.

CAUTION

Danger of explosion if battery is incorrectly replaced.

Replaced only with the same or equivalent type recommended by the manufacture.

Discord used batteries according to the manufacture's instructions.

● Service Precaution

1. You should conform to the regulations governing the product (safety, radio and noise, and other regulations), and should keep the safety during servicing by following the safety instructions described in this manual.
2. Before disassembling the unit, be sure to turn off the power. Unplugging and plugging the connectors during power-on mode may damage the ICs inside the unit.
3. To protect the pickup unit from electrostatic discharge during servicing, take an appropriate treatment (shorting-solder) by referring to "the DISASSEMBLY".
4. After replacing the pickup unit, be sure to check the grating.
5. Be careful in handling ICs. Some ICs such as MOS type are so fragile that they can be damaged by electrostatic induction.



[Important Check Points for Good Servicing]

In this manual, procedures that must be performed during repairs are marked with the below symbol.
Please be sure to confirm and follow these procedures.

1. Product safety



Please conform to product regulations (such as safety and radiation regulations), and maintain a safe servicing environment by following the safety instructions described in this manual.

- ① Use specified parts for repair.

Use genuine parts. Be sure to use important parts for safety.

- ② Do not perform modifications without proper instructions.

Please follow the specified safety methods when modification(addition/change of parts) is required due to interferences such as radio/TV interference and foreign noise.

- ③ Make sure the soldering of repaired locations is properly performed.

When you solder while repairing, please be sure that there are no cold solder and other debris.
Soldering should be finished with the proper quantity. (Refer to the example)

- ④ Make sure the screws are tightly fastened.

Please be sure that all screws are fastened, and that there are no loose screws.

- ⑤ Make sure each connectors are correctly inserted.

Please be sure that all connectors are inserted, and that there are no imperfect insertion.

- ⑥ Make sure the wiring cables are set to their original state.

Please replace the wiring and cables to the original state after repairs.
In addition, be sure that there are no pinched wires, etc.

- ⑦ Make sure screws and soldering scraps do not remain inside the product.

Please check that neither solder debris nor screws remain inside the product.

- ⑧ There should be no semi-broken wires, scratches, melting, etc. on the coating of the power cord.

Damaged power cords may lead to fire accidents, so please be sure that there are no damages.
If you find a damaged power cord, please exchange it with a suitable one.

- ⑨ There should be no spark traces or similar marks on the power plug.

When spark traces or similar marks are found on the power supply plug, please check the connection and advise on secure connections and suitable usage. Please exchange the power cord if necessary.

- ⑩ Safe environment should be secured during servicing.

When you perform repairs, please pay attention to static electricity, furniture, household articles, etc. in order to prevent injuries.
Please pay attention to your surroundings and repair safely.

2. Adjustments



To keep the original performance of the products, optimum adjustments and confirmation of characteristics within specification.
Adjustments should be performed in accordance with the procedures/instructions described in this manual.

3. Lubricants, Glues, and Replacement parts



Use grease and adhesives that are equal to the specified substance.
Make sure the proper amount is applied.

4. Cleaning



For parts that require cleaning, such as optical pickups, tape deck heads, lenses and mirrors used in projection monitors, proper cleaning should be performed to restore their performances.

5. Shipping mode and Shipping screws



To protect products from damages or failures during transit, the shipping mode should be set or the shipping screws should be installed before shipment. Please be sure to follow this method especially if it is specified in this manual.

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1. SPECIFICATIONS

● DEH-P75BT/XN/EW5

General

Power source	14.4 V DC (12.0 V to 14.4 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	6 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 × 50 × 161 mm
Nose	188 × 58 × 28 mm
D	
Chassis	178 × 50 × 166 mm
Nose	170 × 45 × 23 mm
Weight	1.68 kg

Audio

Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output	27 W × 4 (DIN 45324, +B=14.4 V)
Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1
Preout max output level/output impedance	4 V/100 Ω
Equalizer (7-Band Graphic Equalizer):	
Frequency	50/125/315/800/2k/5k/12.5k Hz
Gain	±12 dB
Loudness contour:	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)
HPF:	
Frequency	50/63/80/100/125 Hz
Slope	-12 dB/oct
Subwoofer (mono):	
Frequency	50/63/80/100/125 Hz
Slope	-18 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse
Bass boost:	
Gain	+12 dB to 0 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format:	
Sampling frequency	44.1 kHz

Number of quantization bits	16; linear
Frequency characteristics	5 Hz to 20 000 Hz (± 1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	92 dB (1 kHz)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format	MPEG-4 AAC (iTunes® encoded only)
WAV signal format	Linear PCM & MS ADPCM

FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	8 dBf (0.7 μ V/75 Ω , mono, S/N: 30 dB)
50 dB quieting sensitivity	10 dBf (0.9 μ V/75 Ω , mono)
Signal-to-noise ratio	75 dB (IEC-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (± 3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)
Selectivity	80 dB (± 200 kHz)

MW tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz)
Usable sensitivity	18 μ V (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

LW tuner

Frequency range	153 kHz to 281 kHz
Usable sensitivity	30 μ V (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

Bluetooth

Version	Bluetooth 1.2 certified
Output power	+4 dBm Max. (Power class 2)

Laser diode characteristics

Wavelength	785 nm to 815 nm
Maximum output	1 190 μ m (Emitting period: unlimited)



Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

● DEH-P7850BT/XN/ES

General

Power source	14.4 V DC (12.0 V to 14.4 V allowable)
Grounding system	Negative type
Max. current consumption	10.0 A
Backup current	6 mA or less
Dimensions (W × H × D):	
DIN	
Chassis	178 × 50 × 161 mm
Nose	188 × 58 × 28 mm
D	
Chassis	178 × 50 × 166 mm
Nose	170 × 45 × 23 mm
Weight	1.68 kg

Audio

Maximum power output	50 W × 4 50 W × 2/4 Ω + 70 W × 1/2 Ω (for subwoofer)
Continuous power output ...	22 W × 4 (50 Hz to 15 000 Hz, 5% THD, 4 Ω load, both channels driven)
Load impedance	4 Ω to 8 Ω × 4 4 Ω to 8 Ω × 2 + 2 Ω × 1
Preout max output level/output impedance	4 V/100 Ω
Equalizer (7-Band Graphic Equalizer):	
Frequency	50/125/315/800/2k/5k/12.5k Hz
Gain	±12 dB
Loudness contour:	
Low	+3.5 dB (100 Hz), +3 dB (10 kHz)
Mid	+10 dB (100 Hz), +6.5 dB (10 kHz)
High	+11 dB (100 Hz), +11 dB (10 kHz) (volume: -30 dB)
HPF:	
Frequency	50/63/80/100/125 Hz
Slope	-12 dB/oct
Subwoofer (mono):	
Frequency	50/63/80/100/125 Hz
Slope	-18 dB/oct
Gain	+6 dB to -24 dB
Phase	Normal/Reverse
Bass boost:	
Gain	+12 dB to 0 dB

CD player

System	Compact disc audio system
Usable discs	Compact disc
Signal format:	
Sampling frequency	44.1 kHz
Number of quantization bits	16; linear

Frequency characteristics ...	5 Hz to 20 000 Hz (±1 dB)
Signal-to-noise ratio	94 dB (1 kHz) (IEC-A network)
Dynamic range	92 dB (1 kHz)
Number of channels	2 (stereo)
MP3 decoding format	MPEG-1 & 2 Audio Layer 3
WMA decoding format	Ver. 7, 7.1, 8, 9, 10 (2ch audio) (Windows Media Player)
AAC decoding format	MPEG-4 AAC (iTunes® encoded only)
WAV signal format	Linear PCM & MS ADPCM

FM tuner

Frequency range	87.5 MHz to 108.0 MHz
Usable sensitivity	8 dBf (0.7 μV/75 Ω, mono, S/N: 30 dB)
50 dB quieting sensitivity	10 dBf (0.9 μV/75 Ω, mono)
Signal-to-noise ratio	75 dB (IEC-A network)
Distortion	0.3 % (at 65 dBf, 1 kHz, stereo) 0.1 % (at 65 dBf, 1 kHz, mono)
Frequency response	30 Hz to 15 000 Hz (±3 dB)
Stereo separation	45 dB (at 65 dBf, 1 kHz)

AM tuner

Frequency range	531 kHz to 1 602 kHz (9 kHz) 530 kHz to 1 640 kHz (10 kHz)
Usable sensitivity	18 μV (S/N: 20 dB)
Signal-to-noise ratio	65 dB (IEC-A network)

Bluetooth

Version	Bluetooth 1.2 certified
Output power	+4 dBm Max. (Power class 2)
GAP (Generic Access Profile)	
SDP (Service Discovery Protocol)	
HSP (Head Set Profile)	
HFP (Hands Free Profile)	
A2DP (Advanced Audio Distribution Profile)	
AVRCP (Audio/Video Remote Control Profile)	
OPP (Object Push Profile)	

Infrared remote control

Wavelength	940 nm ±50 nm
Output	typ; 12 mw/sr per Infrared LED



Note

Specifications and the design are subject to possible modifications without notice due to improvements. ■

△

(In the case of no amount instructions, apply as you think it appropriate.)

2.1 PACKING



(1) PACKING SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Cord Assy	See Contrast table(2)	21	Protector	CHP3184
2	Accessory Assy	See Contrast table(2)	22	Microphone Assy	CPM1064
3	Cord Clamper Assy	CEA4636	23-1	Owner's Manual	See Contrast table(2)
* 4	Polyethylene Bag	E36-615	23-2	Owner's Manual	See Contrast table(2)
5	Screw Assy	See Contrast table(2)	23-3	Owner's Manual	See Contrast table(2)
6	Screw	CBA1650	23-4	Owner's Manual	See Contrast table(2)
* 7	Polyethylene Bag	CEG-127	23-5	Installation Manual	See Contrast table(2)
8	Screw	CRZ50P090FTC	* 23-6	Caution Card	See Contrast table(2)
9	Screw	See Contrast table(2)	* 23-7	Passport	See Contrast table(2)
10	Screw	TRZ50P080FTC	* 23-8	Warranty Card	See Contrast table(2)
* 11	Polyethylene Bag	CEG-158	* 23-9	Polyethylene Bag	E36-634
12	Handle	CNC5395	23-10	Caution Card	See Contrast table(2)
13	Bush	CNV3930	24	Remote Control Unit	CXC5715
14	Polyethylene Bag	CEG-162	25	Case Assy	XXA7417
15	Sub Carton	CHG5195	* 26	Clamper	CNV8262
16	Carton	See Contrast table(2)	27	Clip Holder	CZN5471
17	Contain Box	See Contrast table(2)	28	Microphone Holder	CZN5472
18	Protector	CHP2797	29	Cushion	CZN5473
19	Protector	CHP2798	30	Cord Assy	See Contrast table(2)
20	Protector	CHP2812	31	Air Cap	CEG1372

(2) CONTRAST TABLE

DEH-P75BT/XN/EW5 and DEH-P7850BT/XN/ES are constructed the same except for the following:

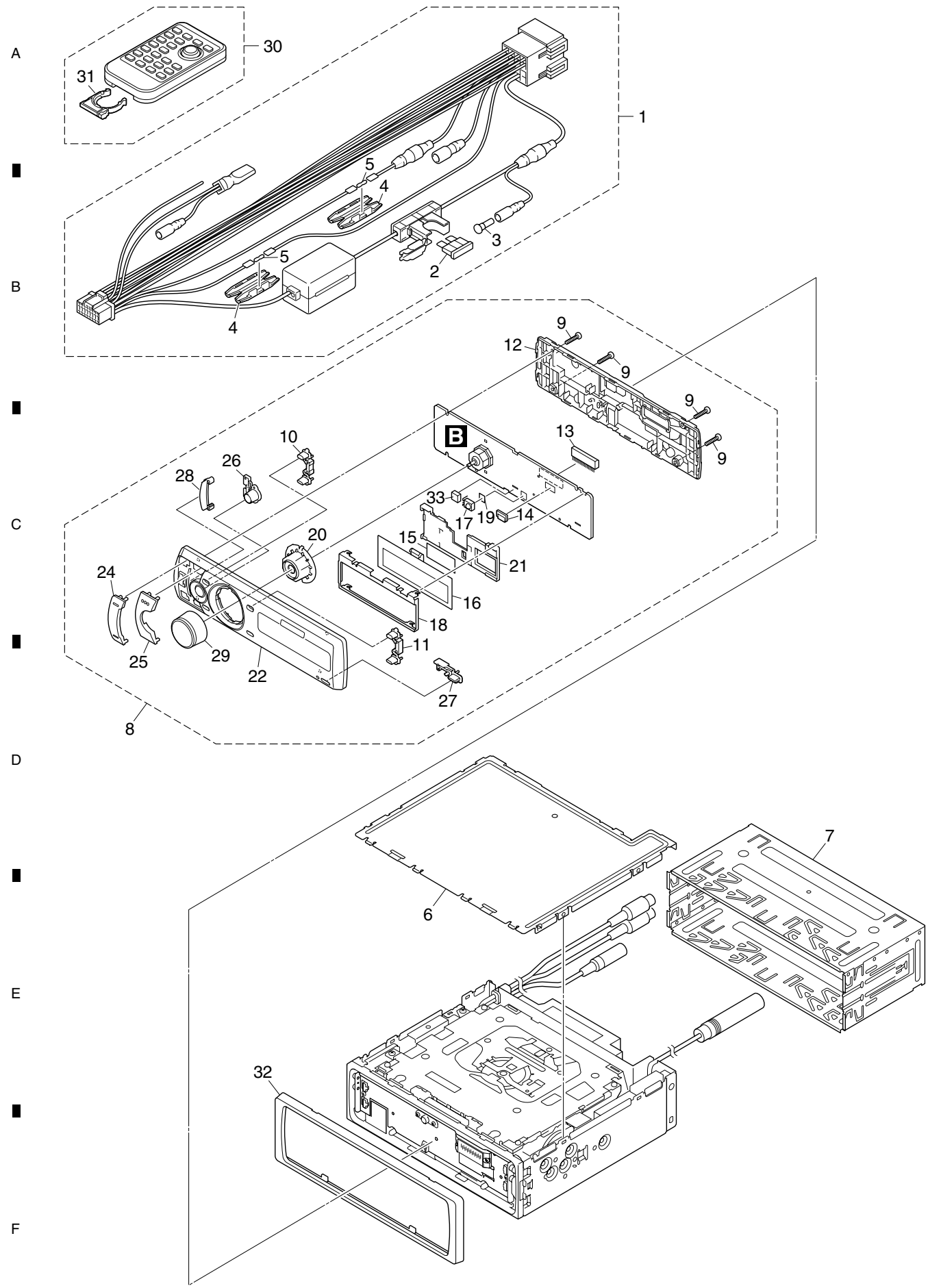
Mark	No.	Description	DEH-P75BT/XN/EW5	DEH-P7850BT/XN/ES
	1	Cord Assy	CDE6562	Not used
	2	Accessory Assy	CEA5919	* CEA5920
	5	Screw Assy	CEA5322	CXC3849
	9	Screw	JPZ20P060FTB	Not used
	16	Carton	CHG5880	CHG5761
	17	Contain Box	CHL5880	CHL5761
	23-1	Owner's Manual	CRD4053	CRD4060
	23-2	Owner's Manual	CRD4056	CRD4061
	23-3	Owner's Manual	CRD4057	Not used
	23-4	Owner's Manual	CRB2135	CRB2136
	23-5	Installation Manual	CRD4058	CRD4059
*	23-6	Caution Card	CRP1335	XRP7002
*	23-7	Passport	CRY1013	Not used
*	23-8	Warranty Card	CRY1157	Not used
	23-10	Caution Card	Not used	CRP1310
	30	Cord Assy	Not used	CDE7701

Owner's Manual, Installation Manual

Part No.	Language
CRD4053	English, Spanish
CRD4056	German, French
CRD4057	Italian, Dutch
CRB2135	Russian
CRD4058	English, Spanish, German, French, Italian, Dutch, Russian
CRD4060	English, Spanish
CRD4061	Portuguese(B), Traditional Chinese,
CRB2136	Arabic
CRD4059	English, Spanish, Portuguese(B), Traditional Chinese, Arabic

1 2 3 4

2.2 EXTERIOR(1)(DEH-P75BT/XN/EW5)

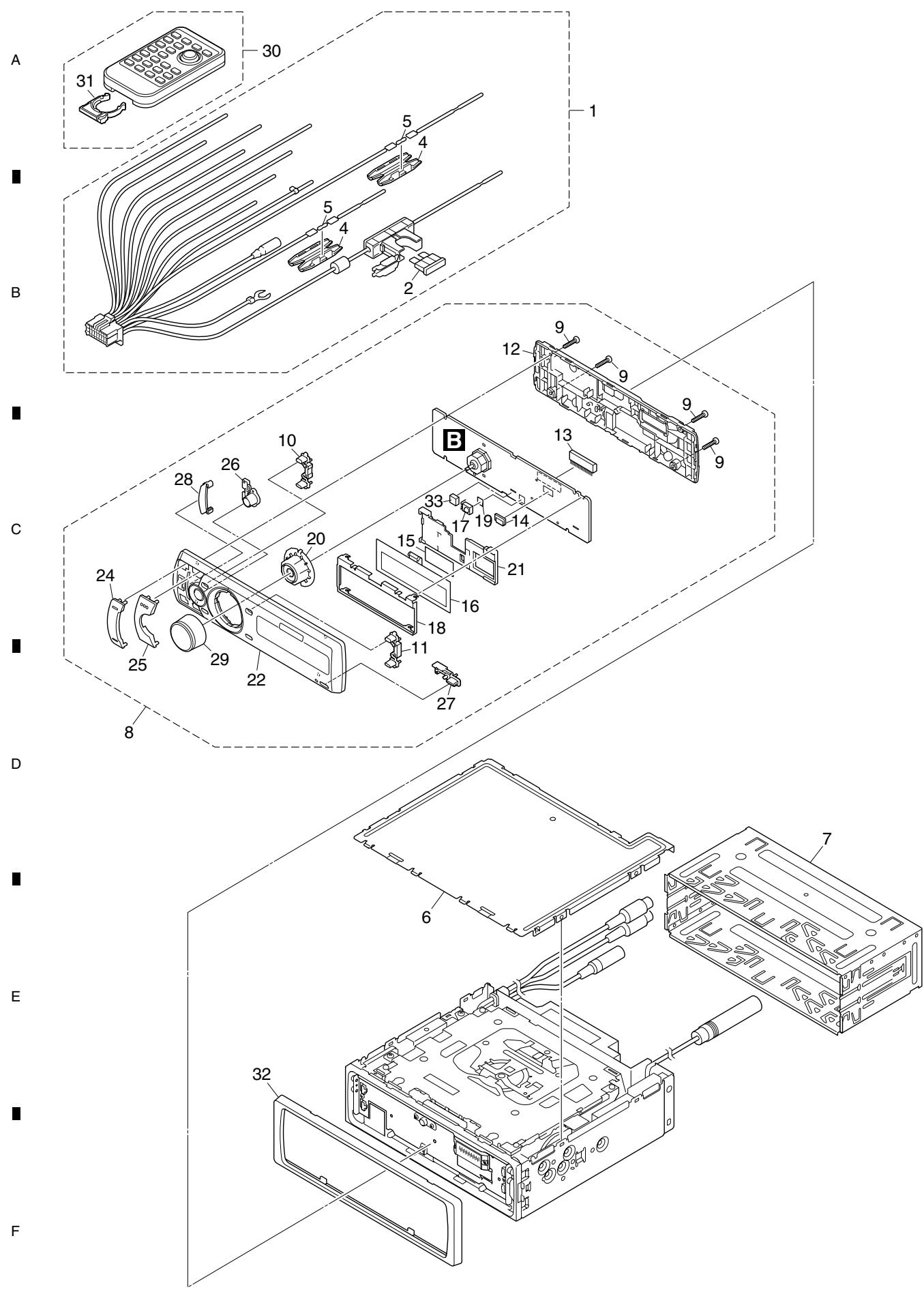


EXTERIOR(1)(DEH-P75BT/XN/EW5) SECTION PARTS LIST

Mark No.	Description	Part No.
1	Cord Assy	CDE6562
⚠ 2	Fuse(10 A)	CEK1136
3	Cap	CKX-003
4	Cap	CNS1472
5	Resistor	RS1/2PMF102J
6	Case	CNB3330
7	Holder	CNC8659
8	Detach Grille Assy	CXC5553
9	Screw	BPZ20P080FTB
10	Button (LIST,EQ)	CAC9571
11	Button (TA, DISP)	CAC9572
12	Cover	CNS8491
13	Connector(CN1801)	CKS5662
14	Connector(CN1961)	CKS5545
15	Double Sided Tape	CNM8673
16	OEL Unit	MXS8231
17	IC (IC1931)	GP1UX31RK
18	Holder	XNC7009
19	Double Sided Tape	XNM7118
20	Holder	XNV7023
21	Holder	XNV7029
22	Sub Grille Assy	CXC5874
23	*****	
24	Button Unit (BAND, ATT)	CXC5877
25	Button Unit (SRC)	CXC5878
26	Button Unit (PHONE)	CXC5881
27	Button (EJECT)	XAC7130
28	Lighting Conductor	XNV7027
29	Knob Unit(MULTI-CONTROL)	XXA7381
30	Remote Control Unit	CXC5715
31	Cover	CZN5357
32	Panel	CNS8492
33	Cushion	CNN1497

1 2 3 4

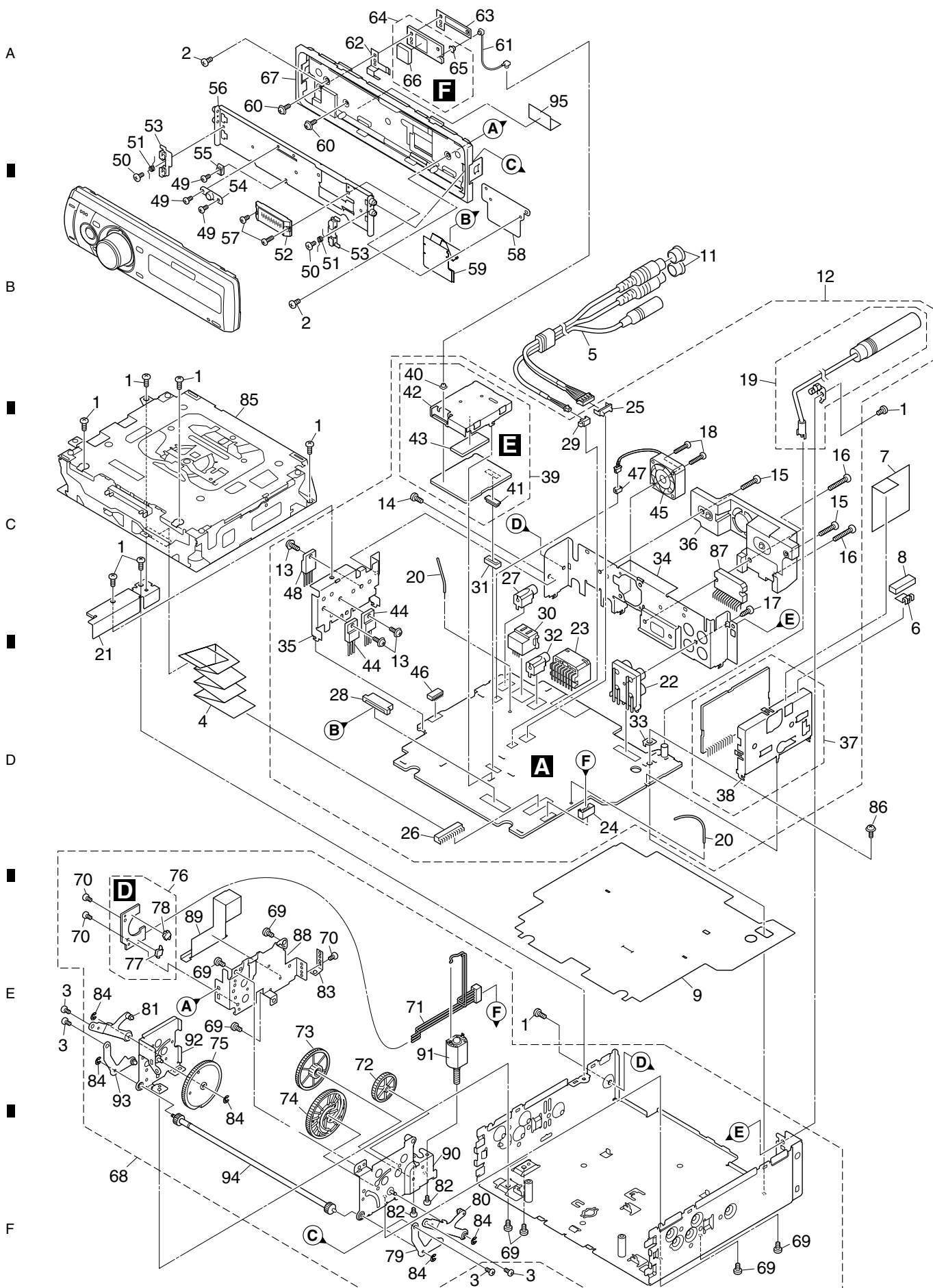
2.3 EXTERIOR(1)(DEH-P7850BT/XN/ES)



EXTERIOR(1)(DEH-P7850BT/XN/ES) SECTION PARTS LIST

Mark No.	Description	Part No.
1	Cord Assy	CDE7701
⚠ 2	Fuse(10 A)	CEK1136
3	*****	
4	Cap	CNS1472
5	Resistor	RS1/2PMF102J
6	Case	CNB3330
7	Holder	CNC8659
8	Detach Grille Assy	CXC5554
9	Screw	BPZ20P080FTB
10	Button (CLOCK,EQ)	CAC9571
11	Button (CLOCK, DISP)	CAC9573
12	Cover	CNS8491
13	Connector(CN1801)	CKS5662
14	Connector(CN1961)	CKS5545
15	Double Sided Tape	CNM8673
16	OEL Unit	MXS8231
17	IC (IC1931)	GP1UX31RK
18	Holder	XNC7009
19	Double Sided Tape	XNM7118
20	Holder	XNV7023
21	Holder	XNV7029
22	Sub Grille Assy	CXC5875
23	*****	
24	Button Unit (BAND, ATT)	CXC5877
25	Button Unit (SRC)	CXC5879
26	Button Unit (PHONE)	CXC5881
27	Button (EJECT)	XAC7130
28	Lighting Conductor	XNV7027
29	Knob Unit(MULTI-CONTROL)	XXA7381
30	Remote Control Unit	CXC5715
31	Cover	CZN5357
32	Panel	XNS7144
33	Cushion	CNN1497

2.4 EXTERIOR(2)



(1) EXTERIOR(2) SECTION PARTS LIST

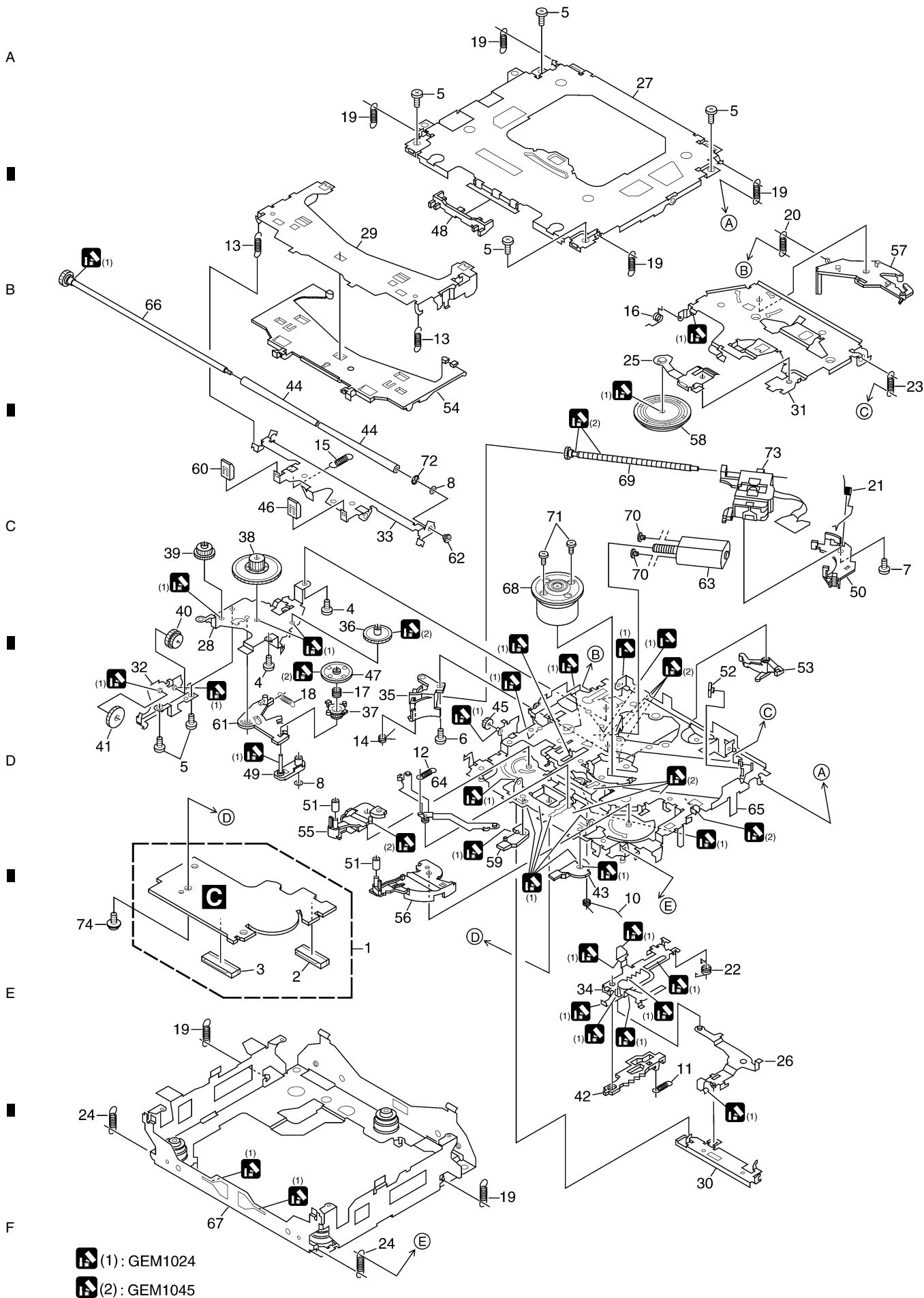
Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P060FTC	49	Screw(M2 x 2)	CBA1871
2	Screw(M2.6 x 4)	CBA1828	50	Screw(M2 x 2)	CBA1935
3	Screw(M2 x 2.5)	CBA1924			
4	Cable	CDE8065	51	Spring	CBH2530
5	Cord Assy	See Contrast table(2)	52	Connector	CKS5273
			53	Arm	CNV6962
6	Earth Plate	CND2171	54	Guide	CNV6967
7	Insulator	CNM8790	55	Guide	CNV8048
8	Cushion	CNM9126			
9	Insulator	CNN1413	56	Case Unit	CXC5695
10	*****		57	Screw(M2 x 3.5)	XBA7002
			58	Holder	XNC7019
11	Cap	CNV6727	59	Flexible PCB	XNP7026
12	Tuner Amp Unit	See Contrast table(2)	60	Screw(M2 x 3.5)	CBA2030
13	Screw	ASZ26P060FTC			
14	Screw	BMZ26P040FTC	61	Cord Assy	CDE8124
15	Screw	BMZ26P120FTC	62	Earth Plate	CND3138
			63	Holder	CND3139
16	Screw	BMZ26P180FTC	64	Antenna Unit	CWN1772
17	Screw	BPZ26P080FTC	65	Connector(ANT1102)	CKS5058
18	Screw(M2.6 x 14)	CBA1632			
19	Antenna Cable(CN401)	CDH1336	66	BT Antenna (ANT1101)	CWX3132
20	Clamper	CEF1050	67	Panel Unit	CXC5696
			68	Drive Unit	CXC6622
21	Holder	CND3606	69	Screw	BMZ26P040FTC
22	Pin Jack(CN301)	CKB1051	70	Screw(M2 x 2)	CBA1871
23	Plug(CN981)	CKM1278			
24	Plug(CN881)	CKS-786	71	Cord	CDE7392
25	Plug(CN302)	CKS1238	72	Gear	CNV7752
			73	Gear	CNV7753
26	Connector(CN701)	CKS3834	74	Gear	CNV7754
27	Connector(CN151)	See Contrast table(2)	75	Gear	CNV7755
28	Connector(CN801)	CKS4811			
29	Connector(CN552)	CKS4977	76	Switch Unit	CWS1389
30	Connector(CN101)	CKS5271	77	Switch(S1)	CSN1051
			78	Switch(S2)	CSN1052
31	Connector(CN551)	CKS5321	79	Arm Unit	CXC2199
32	Connector(CN181)	CKS5523	80	Arm Unit	CXC6623
33	Holder(CN983)	CNC5399			
34	Holder	See Contrast table(2)	81	Arm Unit	CXC6624
35	Holder	CND3133	82	Screw	JFZ20P020FTC
			83	Spring	XBL7003
36	Heat Sink	CNR1838	84	Washer	YE15FTC
37	FM/AM Tuner Unit	See Contrast table(2)	85	CD Mechanism Module (S10.5)	CKX5752
38	Holder	CND1054			
39	Bluetooth Unit	CWN1771	86	Screw	ISS26P055FTC
40	Connector(CN1)	CKS5058	87	IC (IC351)	PAL007B
			88	Holder	XNC7017
41	Connector(CN76)	CKS5320	89	Insulator	XNM7119
42	Shield	CND3134	90	Holder Unit	XXA7399
43	Sheet	CNM9598			
44	Transistor (Q453, Q751)	2SD2396	91	Motor Unit(M881)	XXA7400
45	Fan Motor(M891)	CXM1288	92	Holder Unit	XXA7401
			93	Arm Unit	XXA7403
46	7P FFC Connector (CN553)	VKN1299	94	Gear Unit	XXA7424
47	ZH Connector 2P (CN891)	VKN1928	95	Insulator	CNN1499
48	IC (IC911)	NJM2388F84			

(2) CONTRAST TABLE

DEH-P75BT/XN/EW5 and DEH-P7850BT/XN/ES are constructed the same except for the following:

Mark	No.	Description	DEH-P75BT/XN/EW5	DEH-P7850BT/XN/ES
	5	Cord Assy	CDE8123	CDE7843
	12	Tuner Amp Unit	CWN1425	CWN1426
	27	Connector(CN151)	CKS4124	Not used
	34	Holder	CND3130	CND3131
	37	FM/AM Tuner Unit	CWE1951	CWE1952

2.5 CD MECHANISM MODULE(S10.5)



DEH-P75BT/XN/EW5

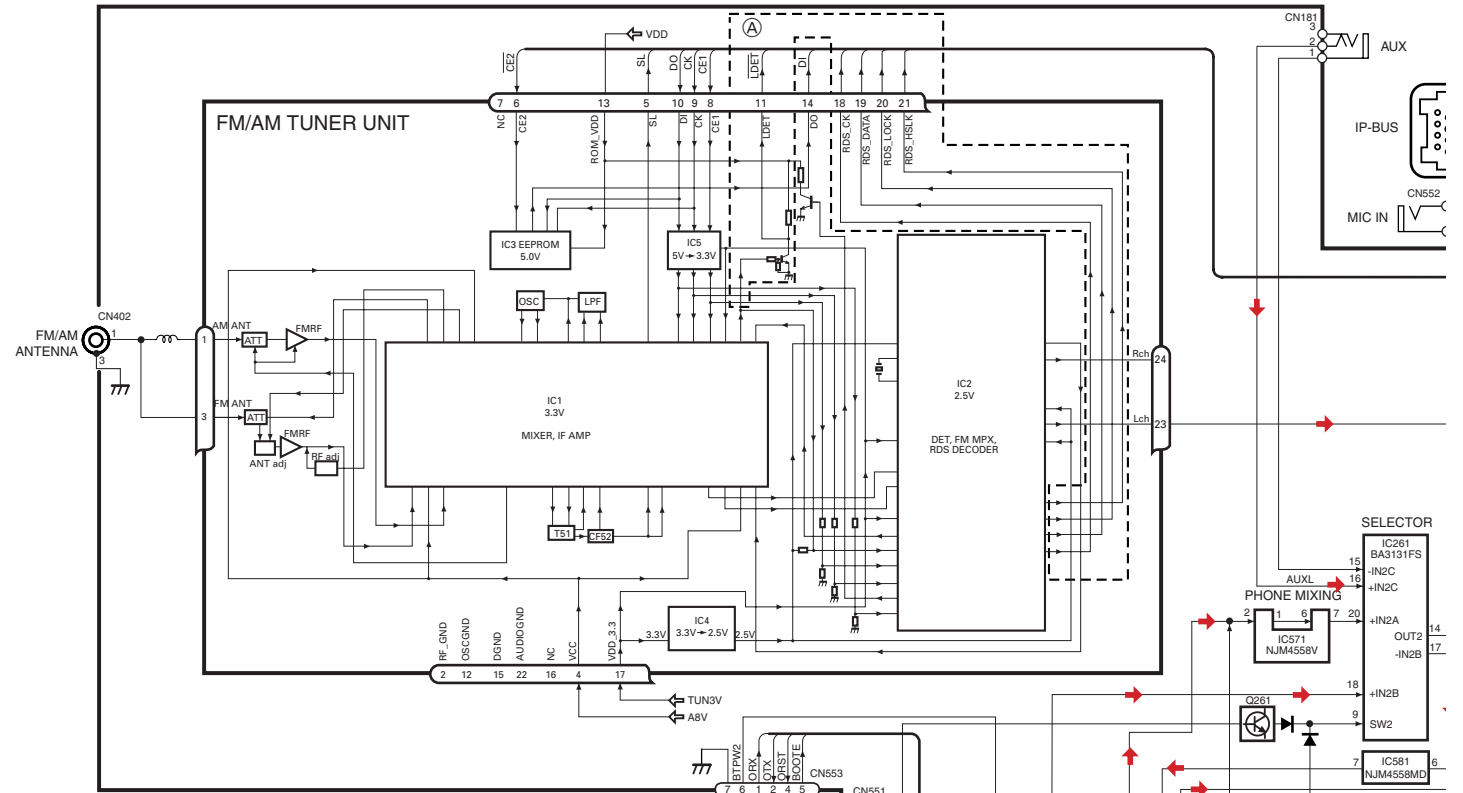
CD MECHANISM MODULE(S10.5) SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.	
1	CD Core Unit(S10.5COMP1)	CWX3410	50	Rack	CNV8342	
2	Connector(CN101)	CKS4182				A
3	Connector(CN901)	CKS5284	51	Roller	CNV8343	
4	Screw	BMZ20P025FTC	52	Holder	CNV8344	
5	Screw	BSZ20P040FTC	53	Arm	CNV8345	
			54	Guide	CNV8347	
6	Screw(M2 x 3)	CBA1511	55	Arm	CNV8348	
7	Screw(M2 x 4)	CBA1835				
8	Washer	CBF1038	56	Arm	CNV8349	
9	*****		57	Arm	CNV8350	
10	Spring	CBH2609	58	Clamper	CNV8365	
			59	Arm	CNV8386	
11	Spring	CBH2612	60	Guide	CNV8396	B
12	Spring	CBH2614				
13	Spring	CBH2616	61	Arm	CNV8413	
14	Spring	CBH2617	62	Collar	CNV8938	
15	Spring	CBH2620	63	Motor Unit(M2)	CXC4026	
			64	Arm Unit	CXC4027	
16	Spring	CBH2855	65	Chassis Unit	CXC4028	
17	Spring	CBH2937				
18	Spring	CBH2735	66	Gear Unit	CXC4029	
19	Spring	CBH2854	67	Frame Unit	CXC4031	
20	Spring	CBH2642	68	Motor Unit(M1)	CXC7134	
			69	Screw Unit	CXC6359	C
21	Spring	CBH2856	70	Screw	JFZ20P020FTC	
22	Spring	CBH2857				
23	Spring	CBH2860	71	Screw	JGZ17P022FTC	
24	Spring	CBH2861	72	Washer	YE20FTC	
25	Spring	CBL1686	73	Pickup Unit(P10.5)(Service)	CXX1942	
			74	Screw	IMS26P030FTC	
26	Arm	CND1909				
27	Frame	CND2582				
28	Bracket	CND2583				
29	Arm	CND2584				
30	Lever	CND2585				D
31	Arm	CND2586				
32	Bracket	CND2587				
33	Arm	CND2588				
34	Lever	CND2589				
35	Holder	CNV7201				
36	Gear	CNV7207				
37	Gear	CNV7208				
38	Gear	CNV7209				
39	Gear	CNV7210				E
40	Gear	CNV7211				
41	Gear	CNV7212				
42	Rack	CNV7214				
43	Arm	CNV7216				
44	Roller	CNV7218				
45	Gear	CNV7219				
46	Guide	CNV7361				
47	Gear	CNV7595				F
48	Guide	CNV7799				
49	Arm	CNV7805				

3. BLOCK DIAGRAM AND SCHEMATIC DIAGRAM

3.1 BLOCK DIAGRAM

A TUNER AMP UNIT

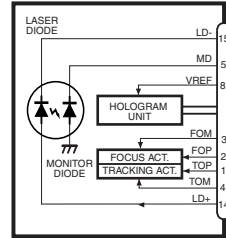


Ⓐ: DEH-P75BT/XN/EW5

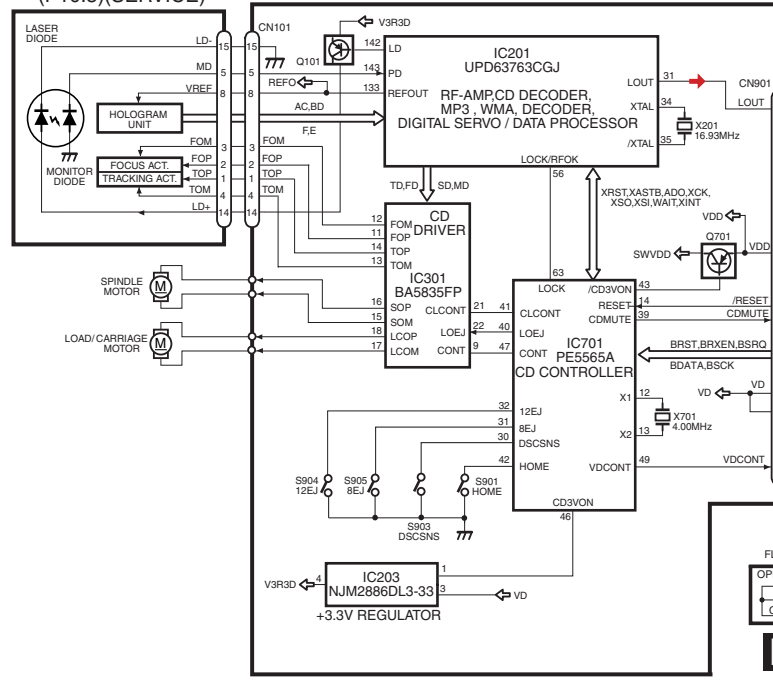
Ⓑ: DEH-P7850BT/XN/ES

E CN76

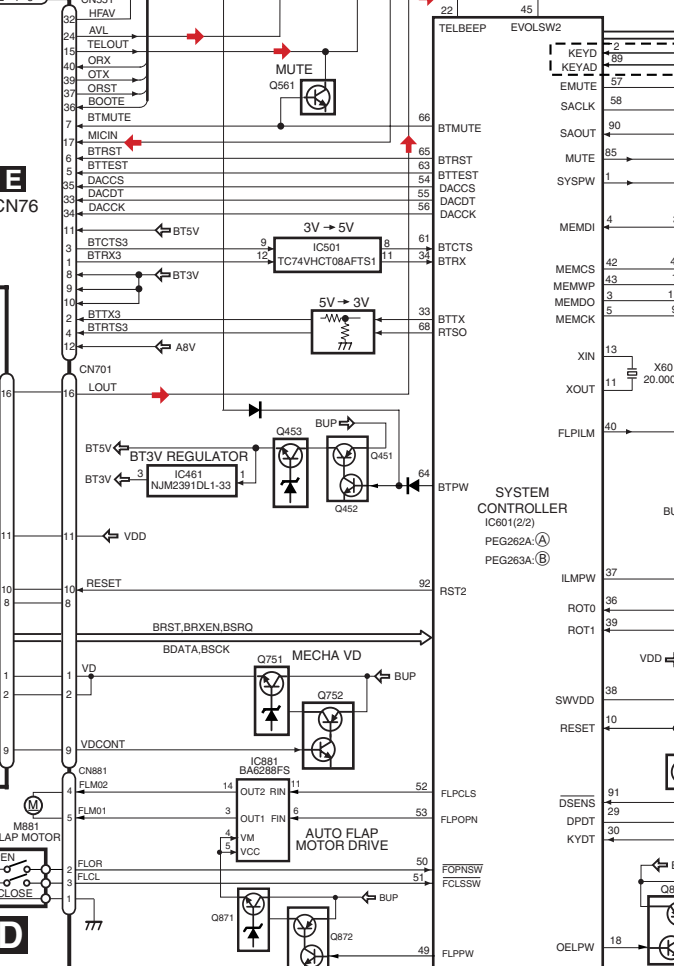
PICKUP UNIT (P10.5)(SERVICE)

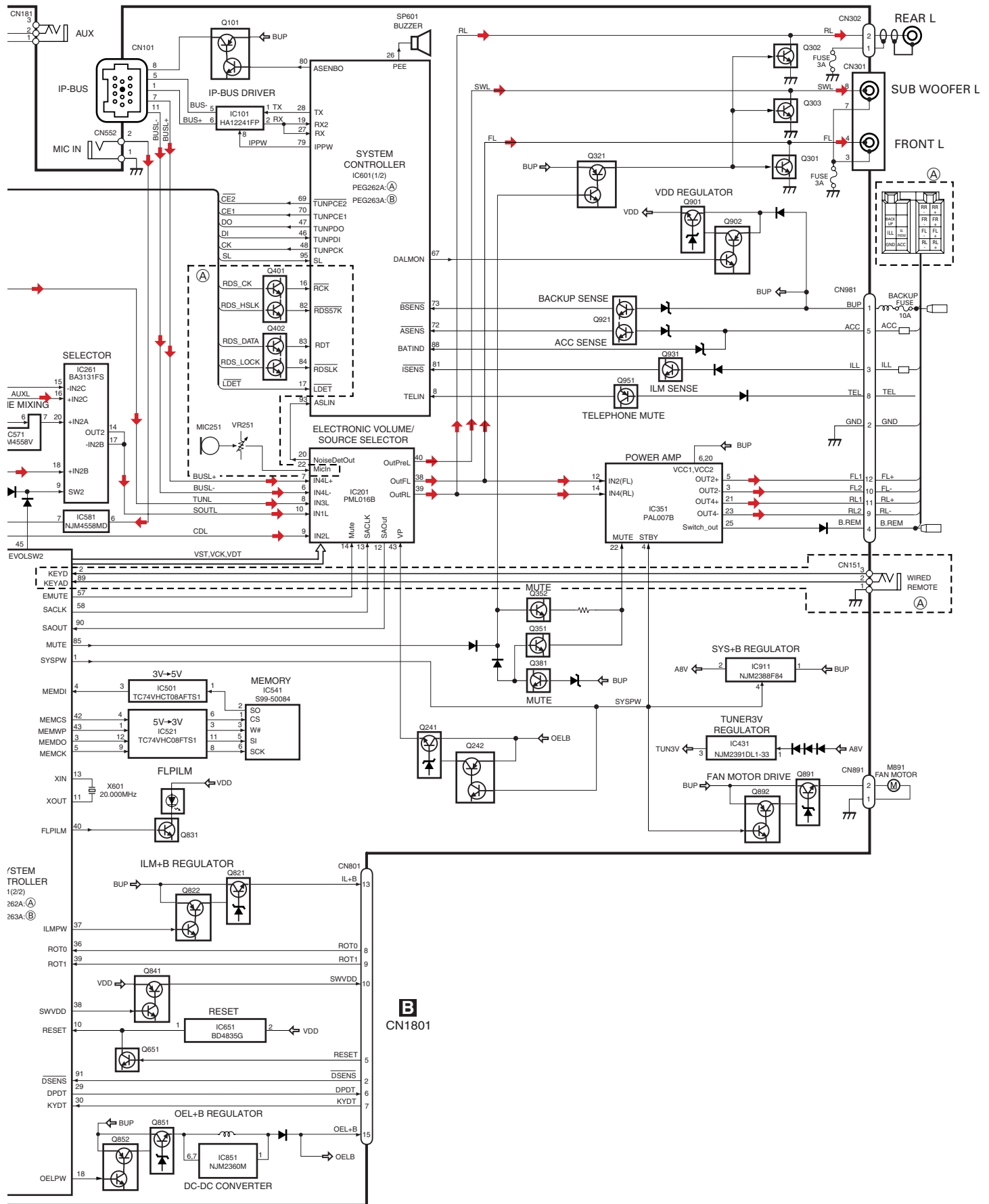


C CD CORE UNIT(S10.5COMP1)

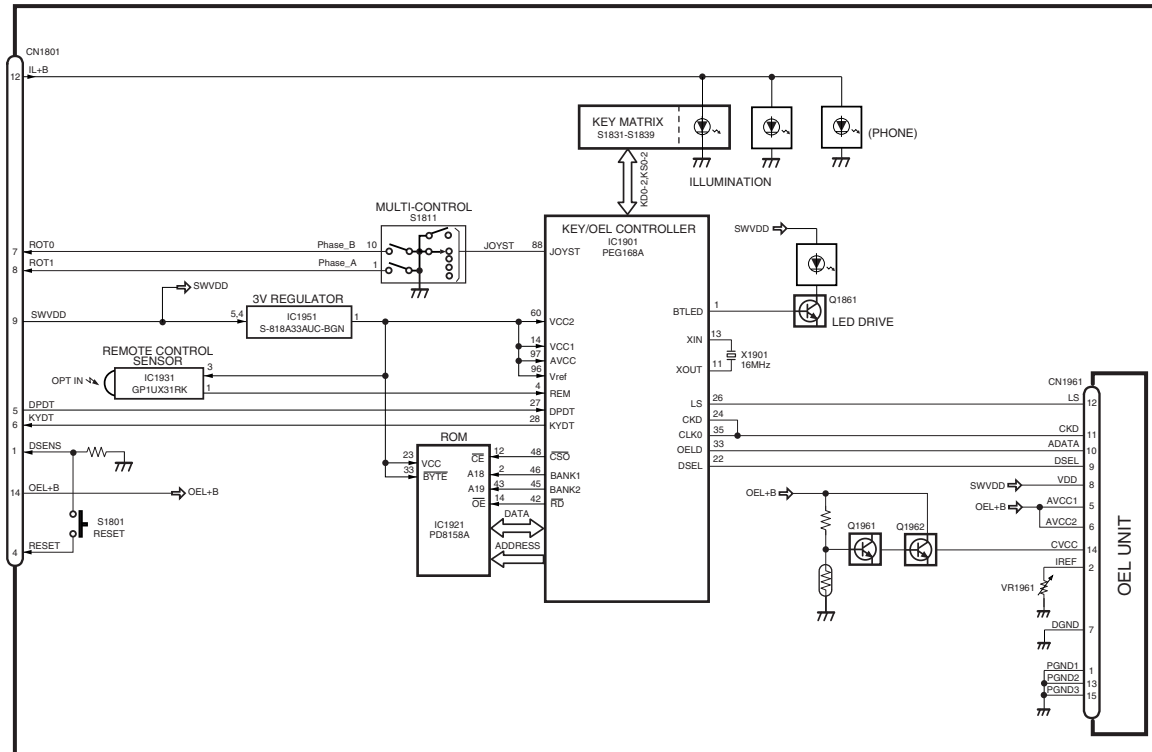


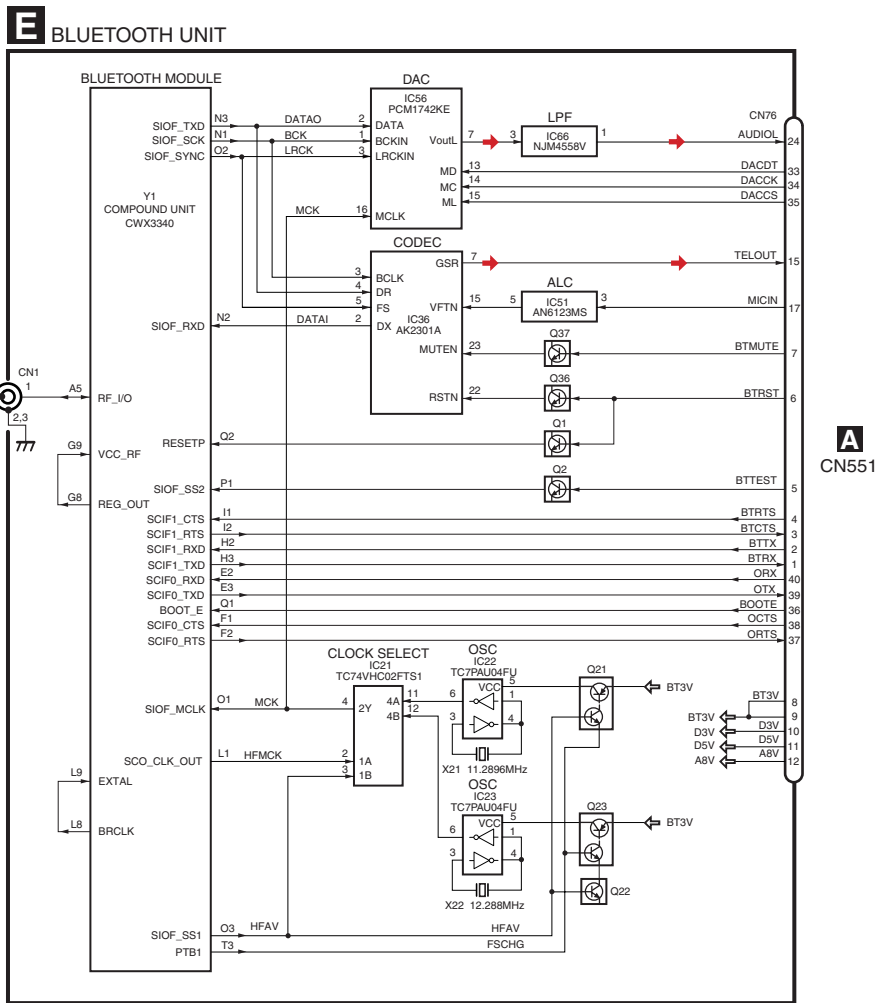
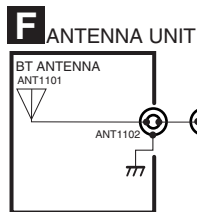
D SWITCH UNIT





B KEYBOARD UNIT





4

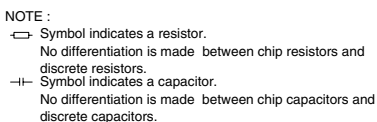
A



SWITCH UNIT

 : The power supply is shown with the marked box.

7
t
7



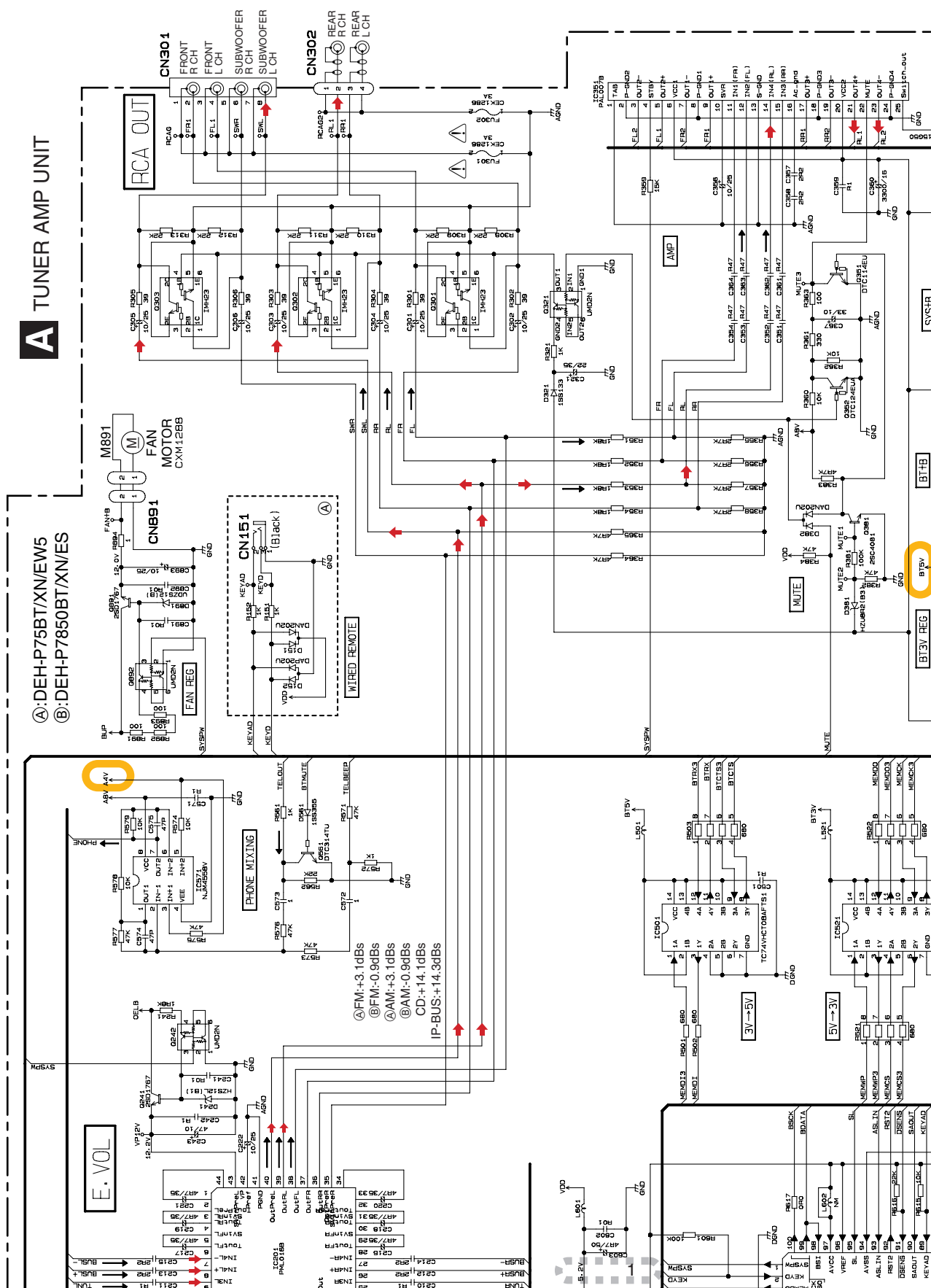
Decimal points for resistor and capacitor fixed values are expressed as :

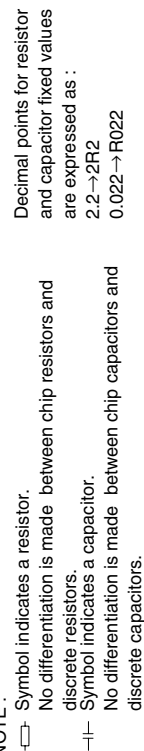
2.2 → 2R2


0.022 → R022

The mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

DEH-P75BT/XN/EW5





The  mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

A-a A-b

DEH-P75BT/XN/EW5



3.3 KEYBOARD UNIT

A

A
CN801

B

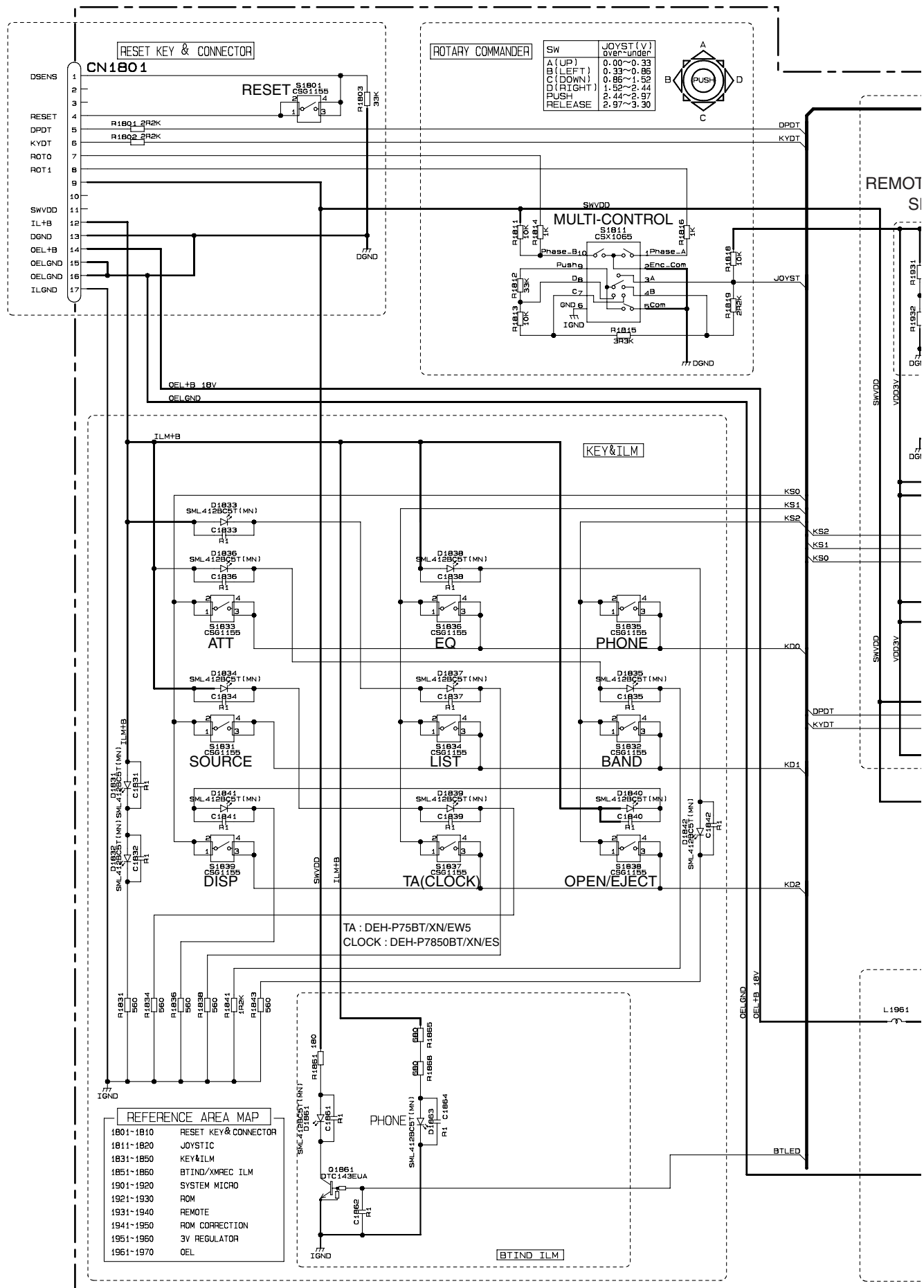
C

D

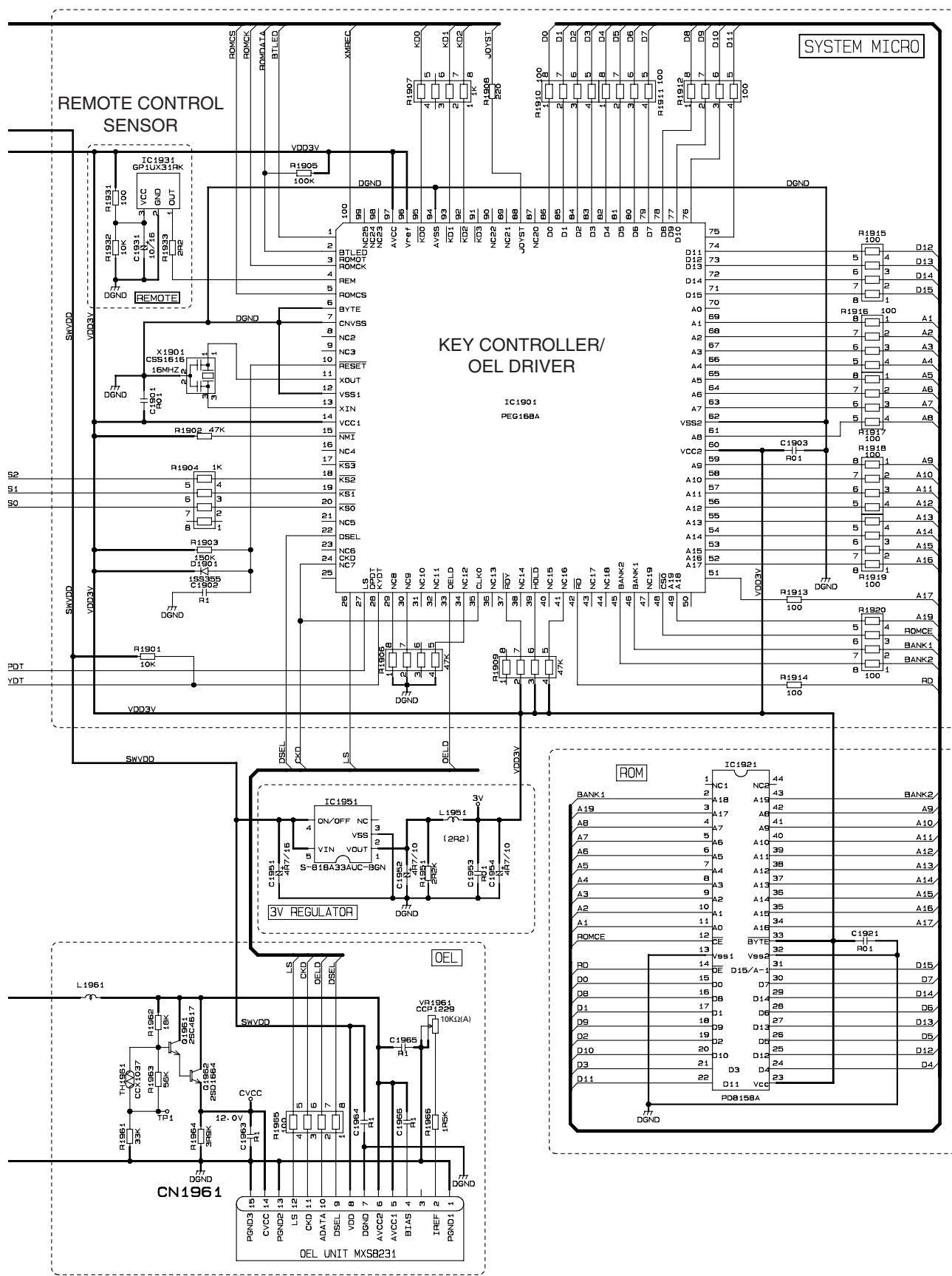
E

F

B



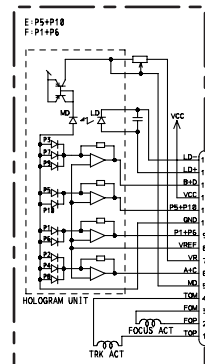
B KEYBOARD UNIT



3.4 CD MECHANISM MODULE(S10.5)(GUIDE PAGE)

C-a

PICKUP UNIT(P10.5)(SERVICE)



F. ACT: APPLYING POSITIVE DISC TO POP.
T. ACT: APPLYING POSITIVE VOLTAGE TO TOP OF THE DISC TO DISC DIFFERENCE.

SWITCHES:

CD CORE UNIT(S10.5COMP1)

S901:HOME SWITCH.....ON-OFF

S903:DSCSNS SWITCH.....ON-OFF

S904:12EJ SWITCH.....ON-OFF

S905:8EJ SWITCH.....ON-OFF

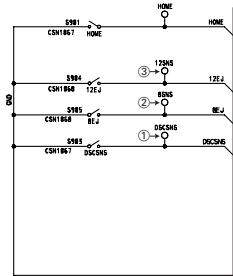
The underlined indicates the switch position.

M1: CXG7134
SPINDLE MOTOR

M2: CXG4026
LOADING/CARRIAGE MOTOR

CD DRIVER

	LOAD EJECT PLAY OFF			
	CLOCK	LOC	LOC	LOC
CONT	H	H	L	L
CONT	L	L	H	H



① Monitor land(ø1.2mm)
② Monitor land(ø0.8mm)
③ Land for manual soldering

NOTE1) GND ... CD LSI, RFAMP, CPU
PGND ... Actuator, Motor Driver
AGND ... Audio
These GND's are not connected to each other on PCB.
PGND is connected to a floating mechanism part by a screw.

DEH-P75BT/XN/EW5

A

B

C

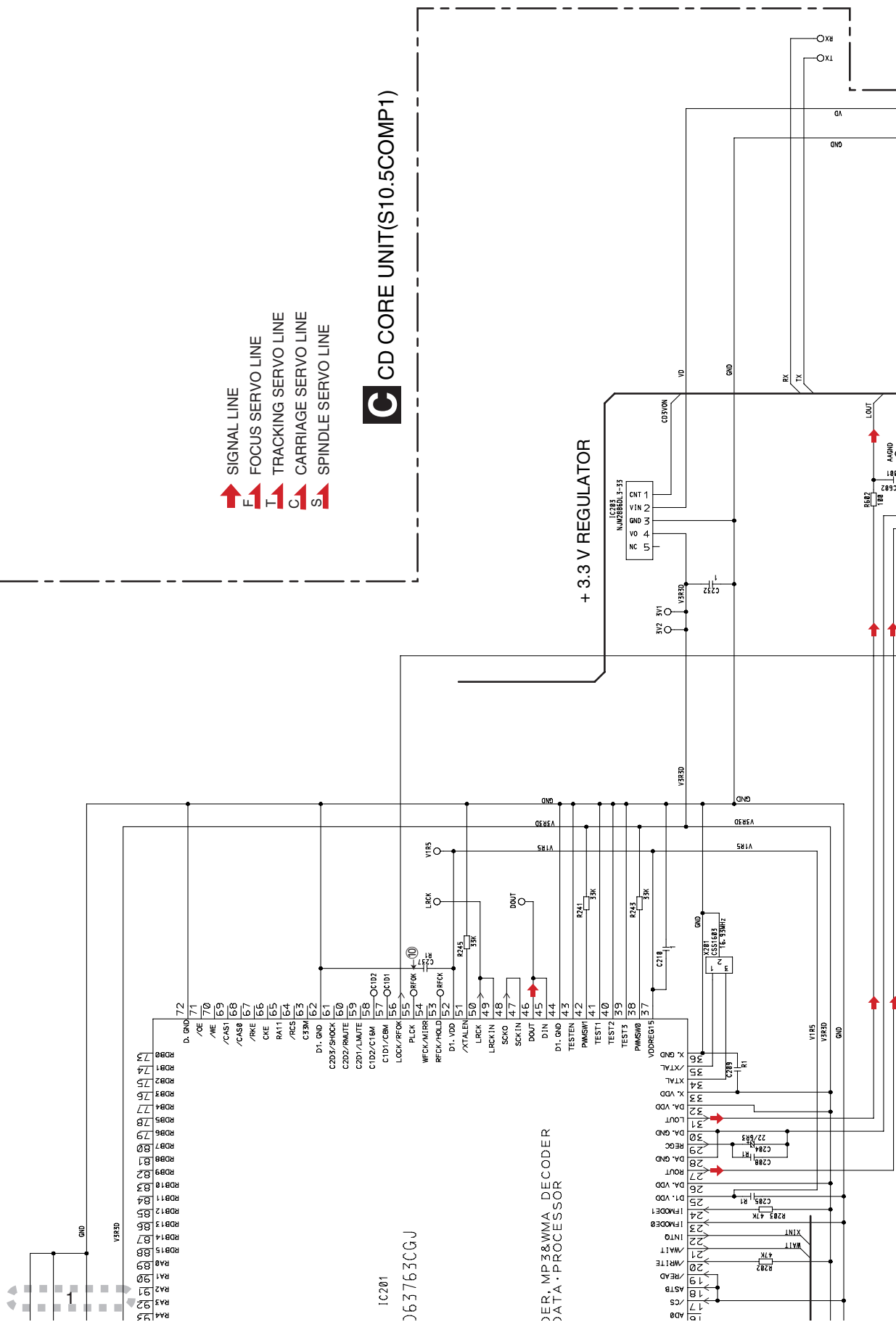
D

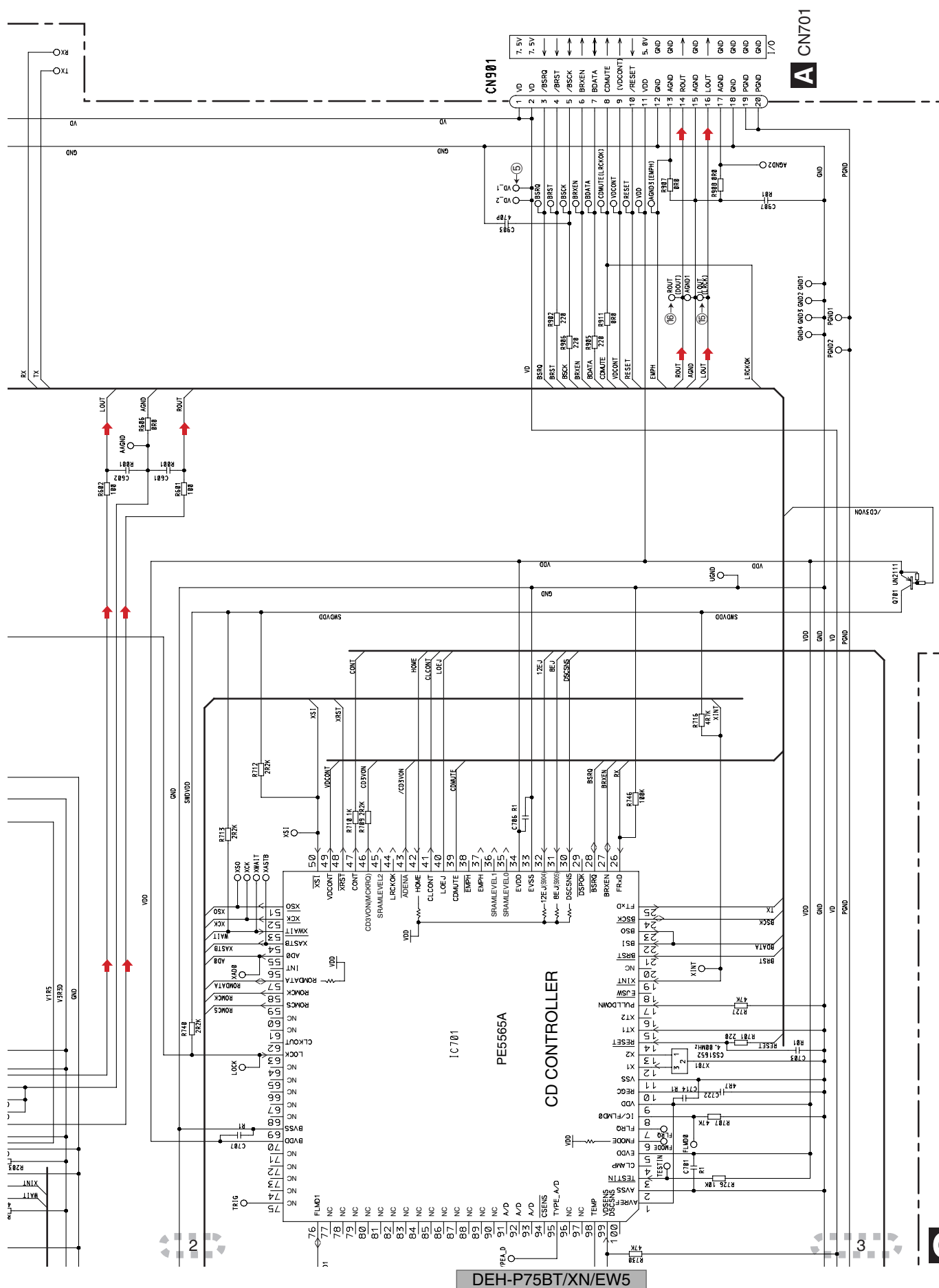
E

F

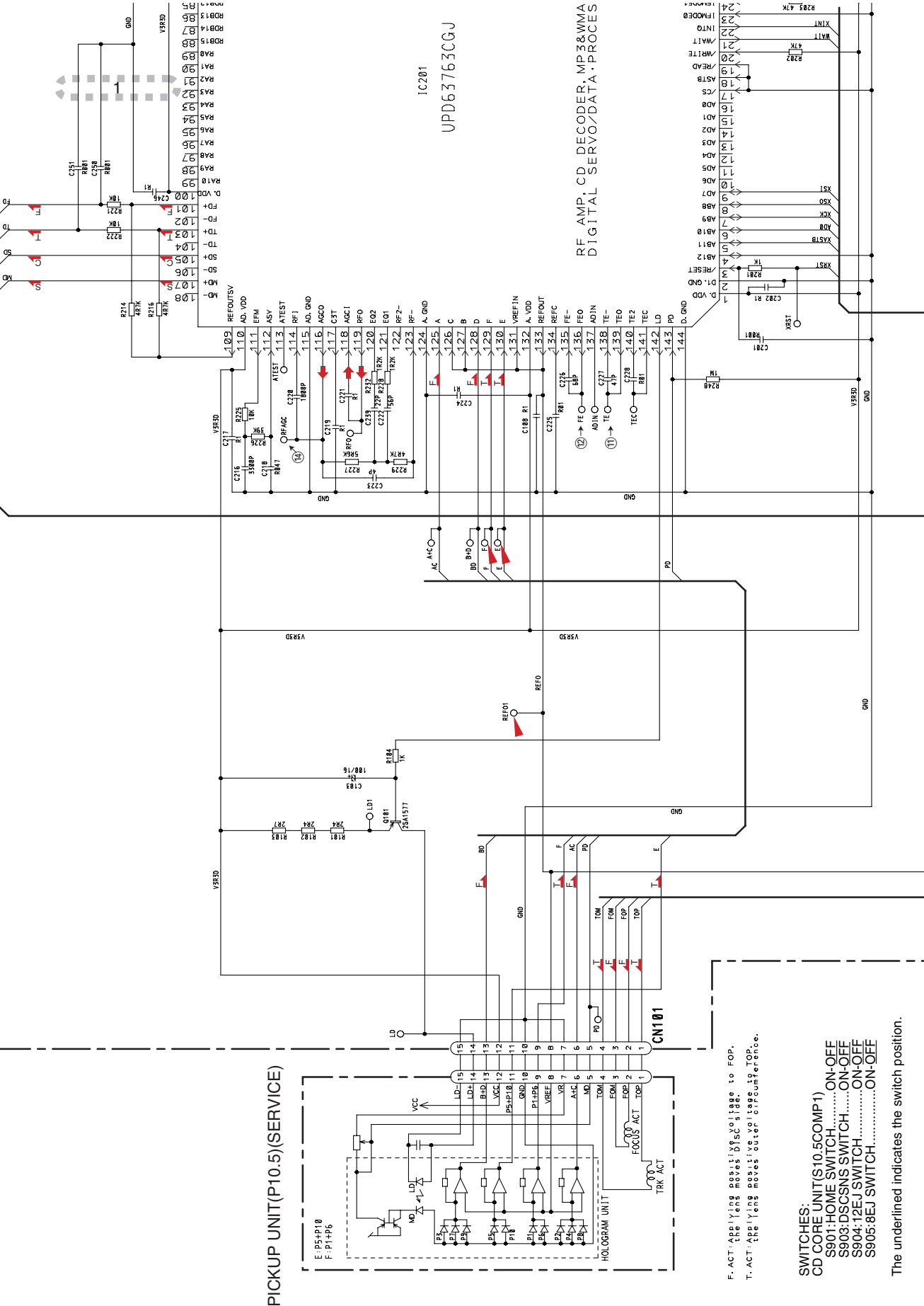
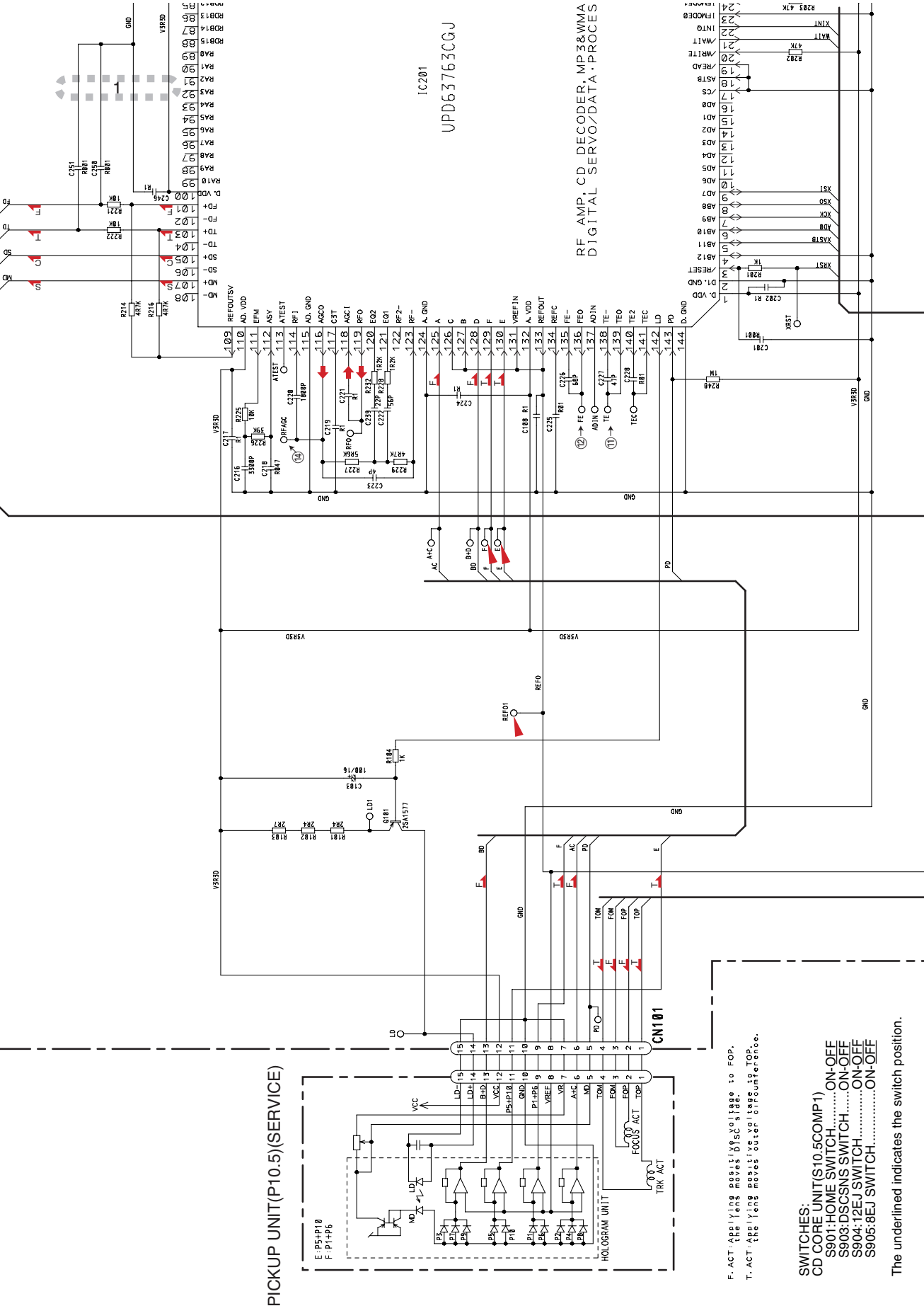


F





DEH-P75BT/XN/EW5



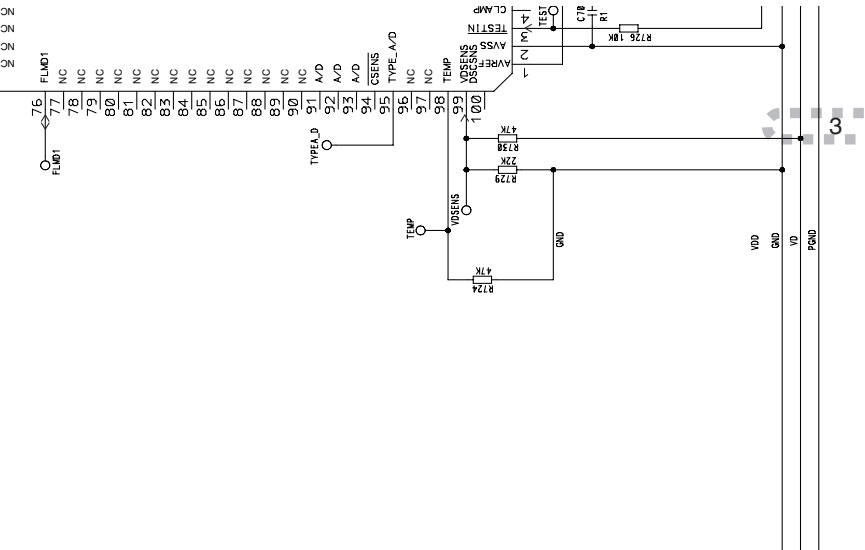
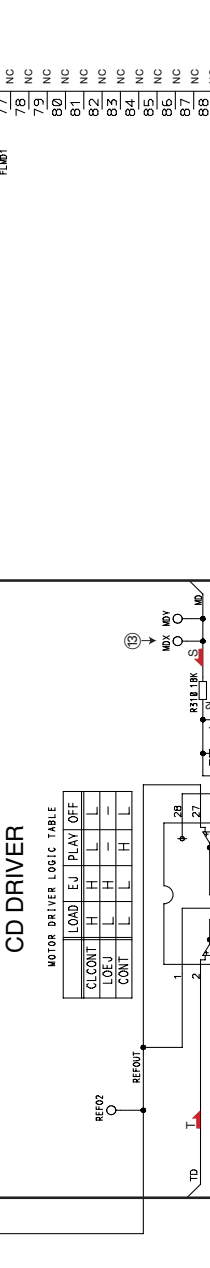


Diagram of a pond with a central island. The pond is represented by a large rectangle. A path, indicated by a series of small squares, leads from the bottom edge of the pond to a central island. The island is a smaller rectangle. The number '3' is written on the path. The word 'POND' is written vertically on the left side of the pond.

C-b Each other on PCB.
Mechanism part by a screw.

each other on PCB. mechanism part by a screw.

each other on PCB.
Mechanism part by a screw.

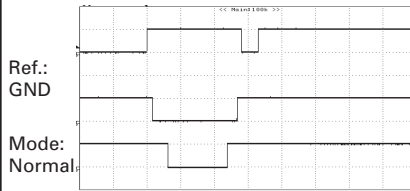
Waveforms

Note : 1. The encircled numbers denote measuring points in the circuit diagram.
2. Reference voltage REFO1(1.65 V)

A

① DSCSNS 5 V/div 500 ms/div
② 8SNS 5 V/div
③ 12SNS 5 V/div

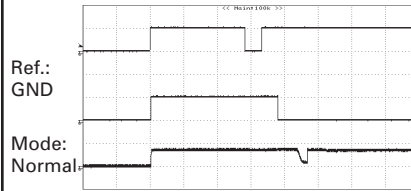
12 cm CD Loading operation



B

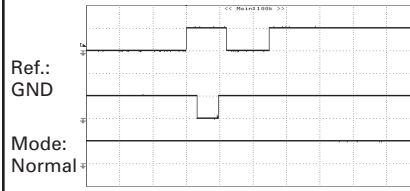
① DSCSNS 5 V/div 500 ms/div
④ CLCONT 5 V/div
⑤ VD 10 V/div

12 cm CD Loading operation



① DSCSNS 5 V/div 500 ms/div
② 8SNS 5 V/div
③ 12SNS 5 V/div

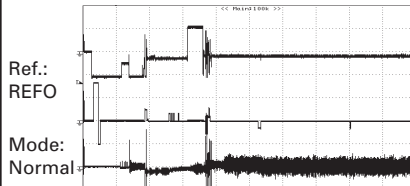
8 cm CD Loading operation



C

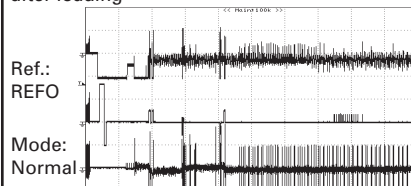
⑥ SIN 1 V/div 1 s/div
⑦ CIN 500 mV/div
⑧ TIN 500 mV/div

12 cm CD-DA setup operation after loading



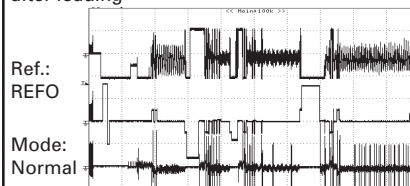
⑥ SIN 1 V/div 1 s/div
⑦ CIN 500 mV/div
⑧ TIN 500 mV/div

12 cm CD-ROM(1 session) setup operation after loading



⑥ SIN 1 V/div 1 s/div
⑦ CIN 500 mV/div
⑧ TIN 500 mV/div

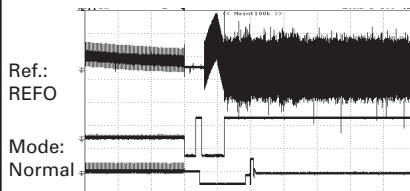
12 cm CD-ROM(3 sessions) setup operation after loading



D

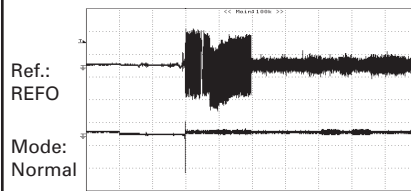
⑨ FIN 200 mV/div 500 ms/div
⑩ RFOK 2 V/div
⑥ SIN 2 V/div

12 cm CD-DA Source On setup operation



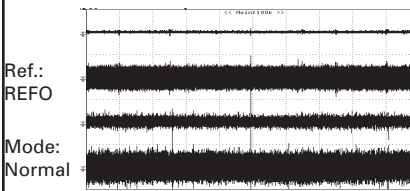
⑪ TE 500 mV/div 200 ms/div
⑫ FE 500 mV/div

Source On setup operation



⑫ FE 500 mV/div 20 ms/div
⑨ FIN 500 mV/div
⑪ TE 500 mV/div
⑧ TIN 500 mV/div

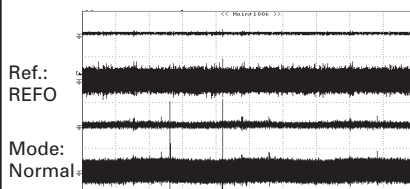
CD-DA Play operation



E

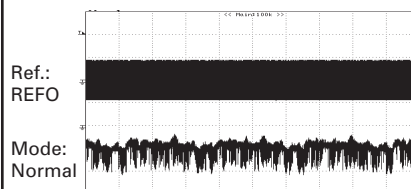
⑫ FE 500 mV/div 20 ms/div
⑨ FIN 500 mV/div
⑪ TE 500 mV/div
⑧ TIN 500 mV/div

CD-ROM play operation(Regular track Jump)



⑬ MDX 2 V/div 50 ms/div
⑥ SIN 200 mV/div

Spindle waveform during play operation

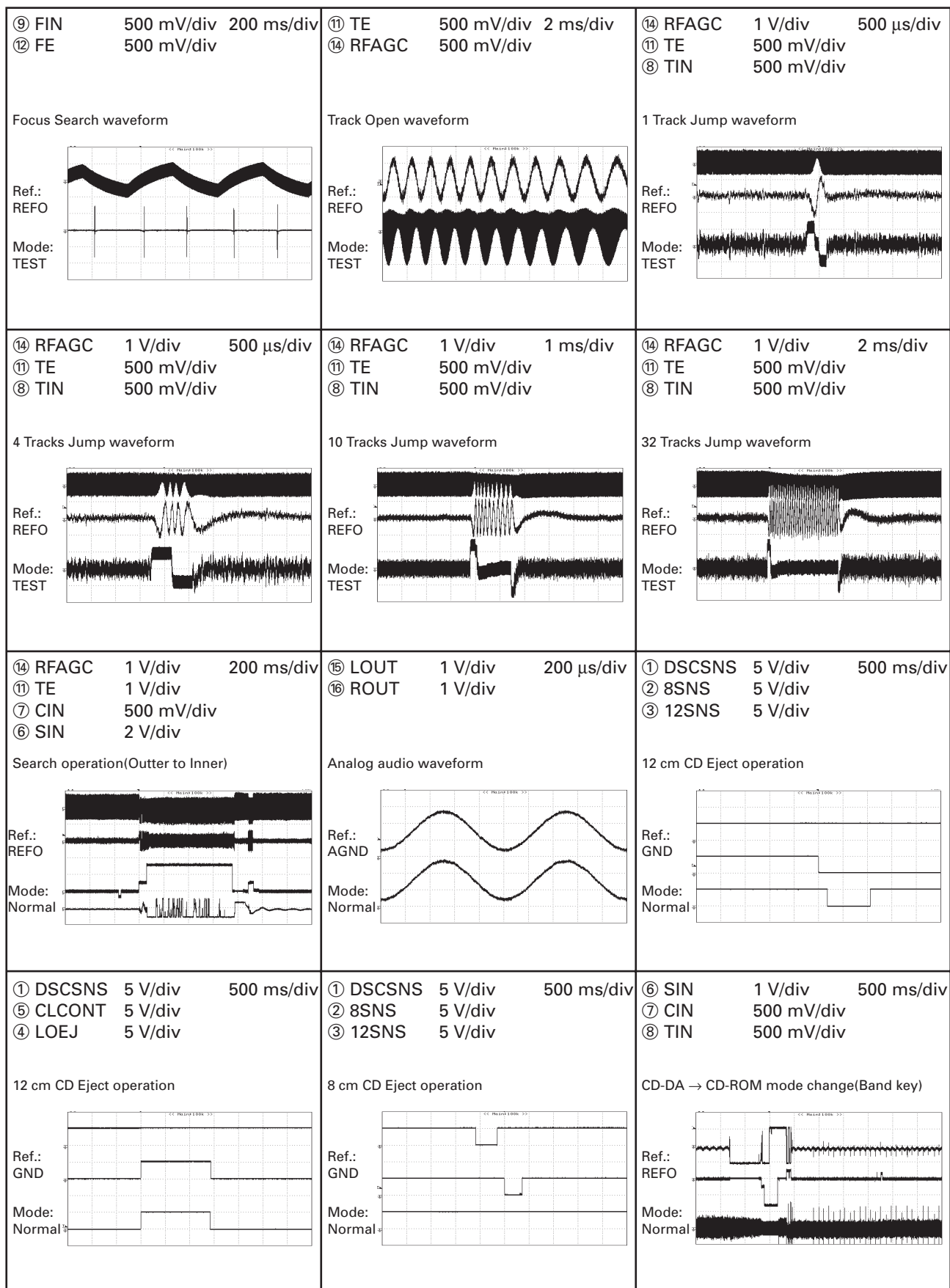


⑬ MDX 2 V/div 5 μs/div
⑥ SIN 500 mV/div

Spindle waveform during play operation (Wider)



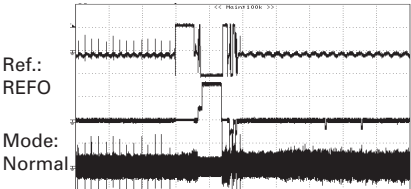
F



A

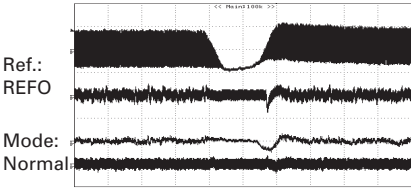
⑥ SIN 1 V/div 500 ms/div
⑦ CIN 500 mV/div
⑧ TIN 500 mV/div

CD-ROM → CD-DA mode change(Band key)



⑭ RFAGC 1 V/div 500 μs/div
⑧ TIN 1 V/div
⑪ TE 1 V/div
⑨ FIN 1 V/div

Black dot(800 μm) during play



B

C

D

E

F

■

5

■

6

■

7

■

8

■

A

■

B

■

C

■

D

■

E

■

F

■

5

■

6

■

7

■

8

■

3.5 BLUETOOTH UNIT, ANTENNA UNIT

A

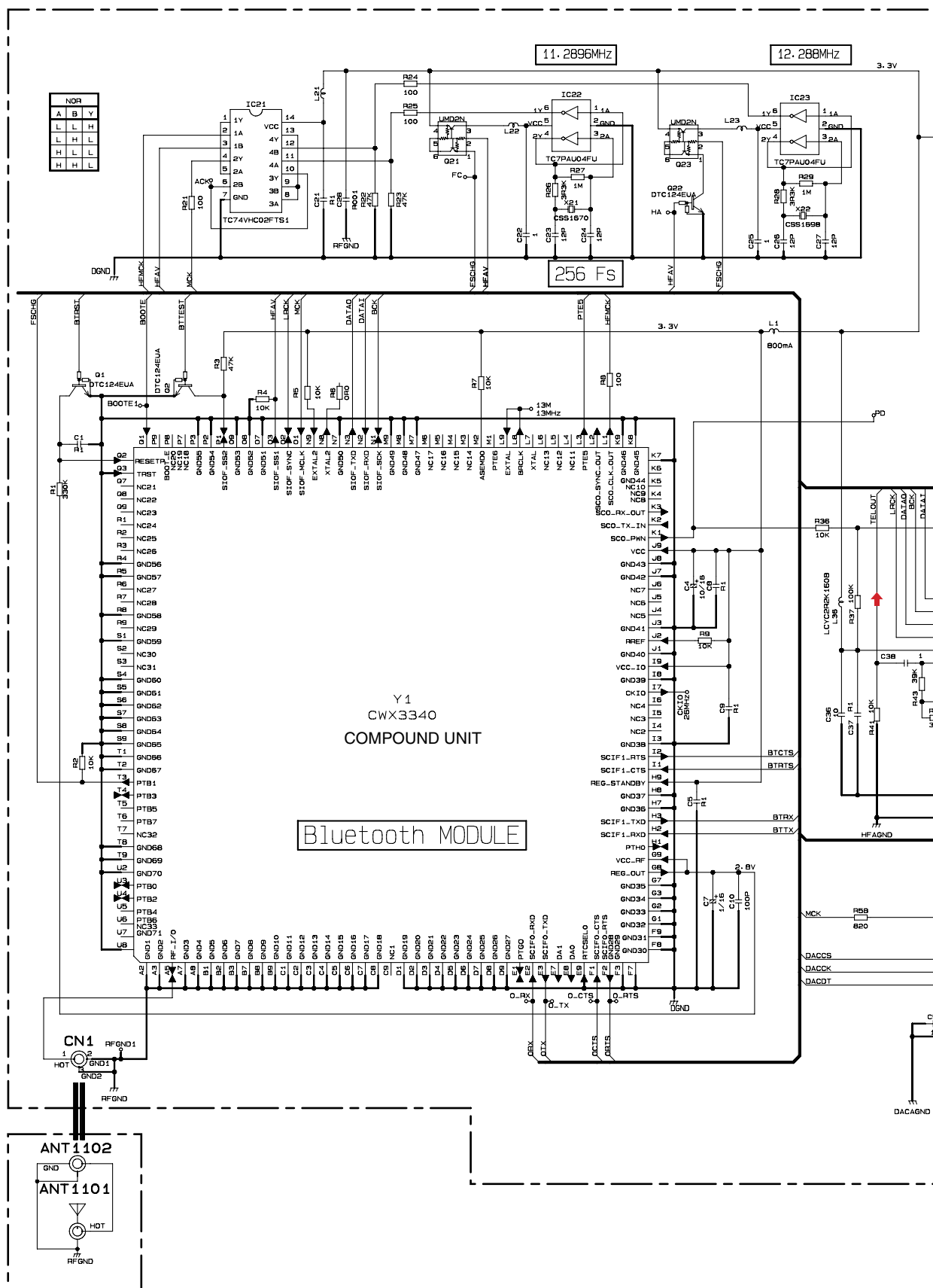
B

C

D

E

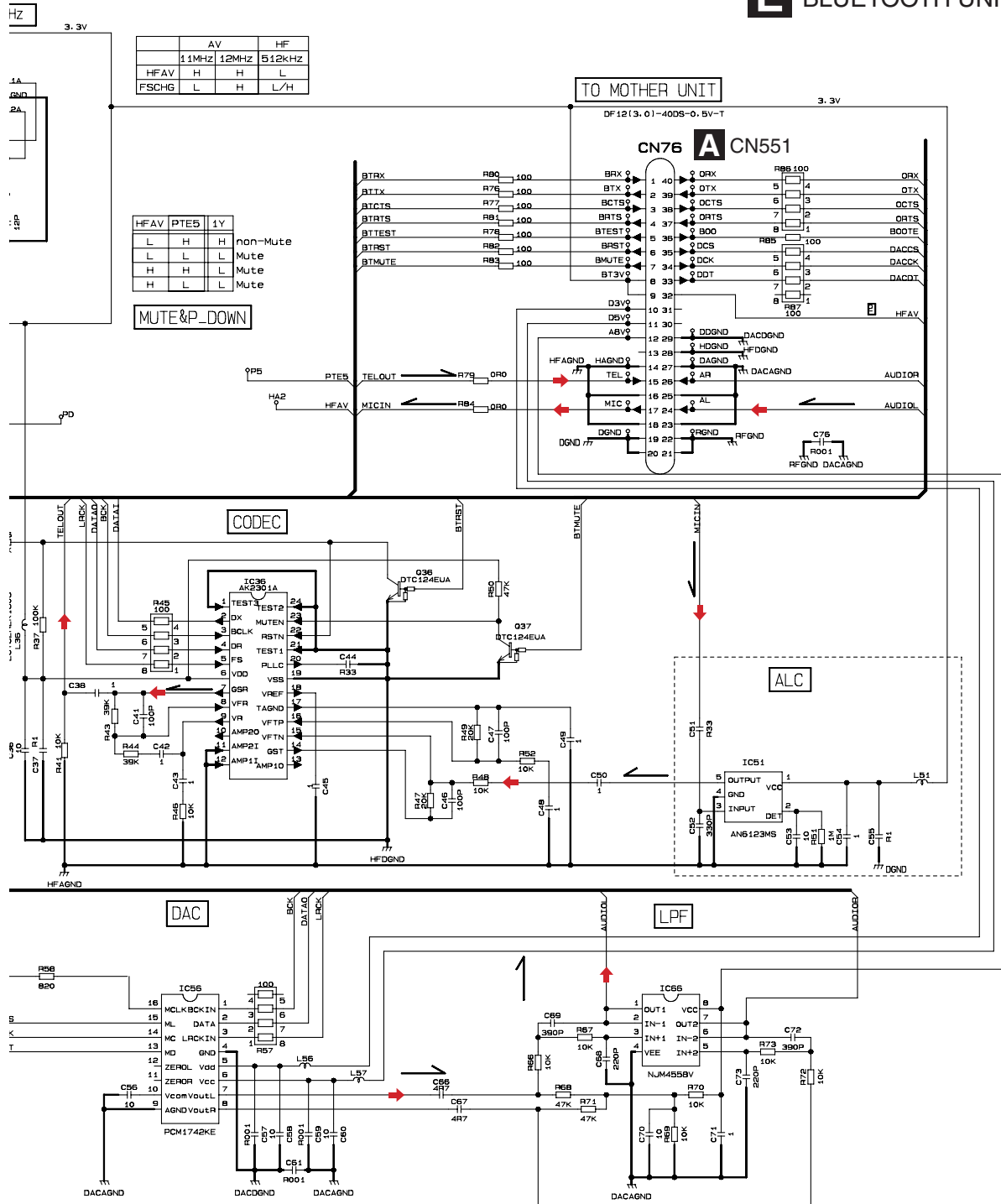
F



F ANTENNA UNIT

E

BLUETOOTH UNIT



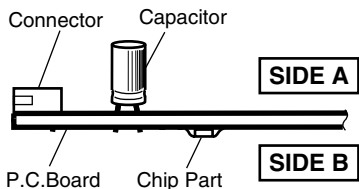
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

NOTE FOR PCB DIAGRAMS

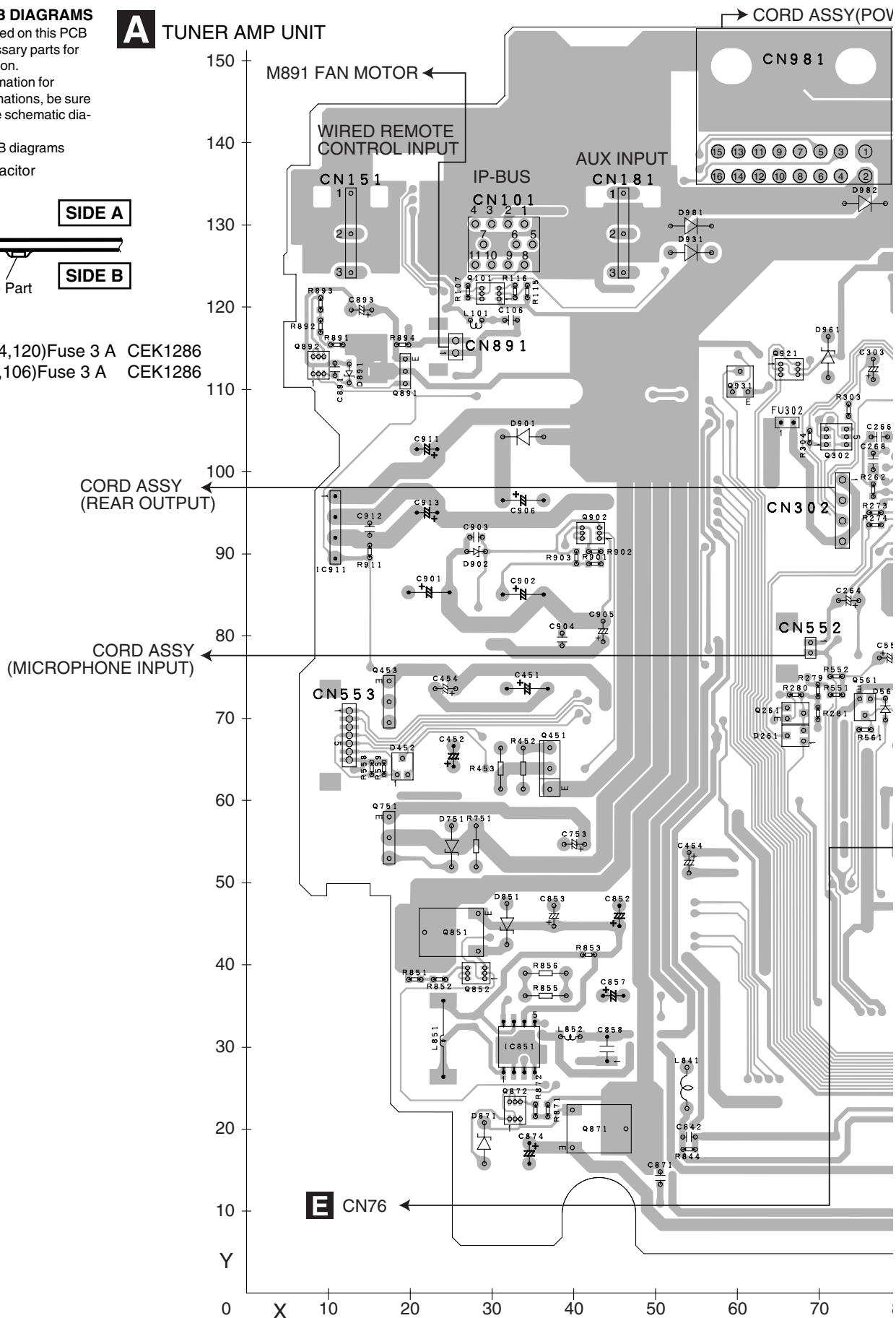
1. The parts mounted on this PCB include all necessary parts for several destination.
For further information for respective destinations, be sure to check with the schematic diagram.

2. Viewpoint of PCB diagrams



⚠ FU 301 (A,144,120) Fuse 3 A CEK1286
⚠ FU 302 (A,66,106) Fuse 3 A CEK1286

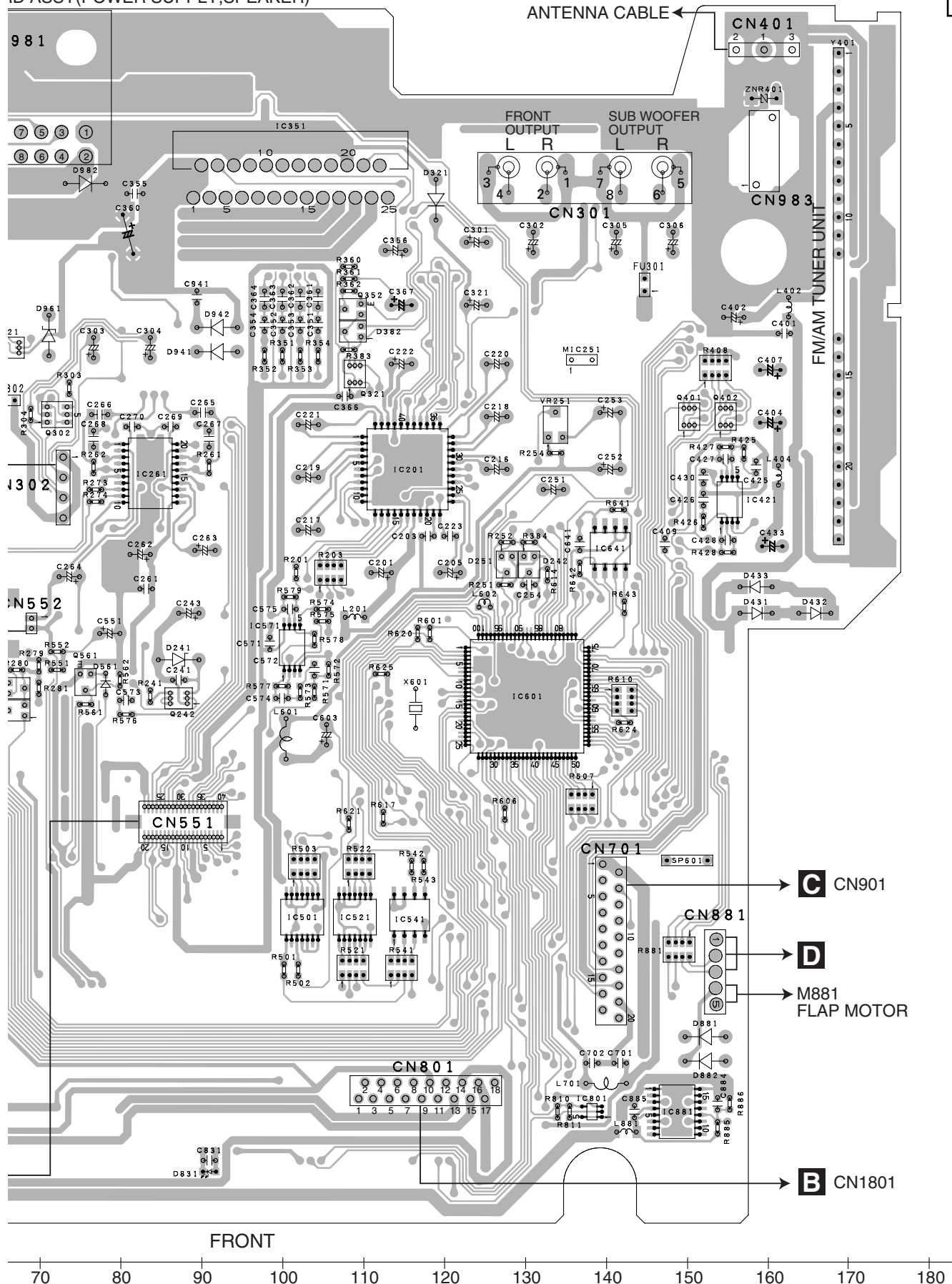
A TUNER AMP UNIT



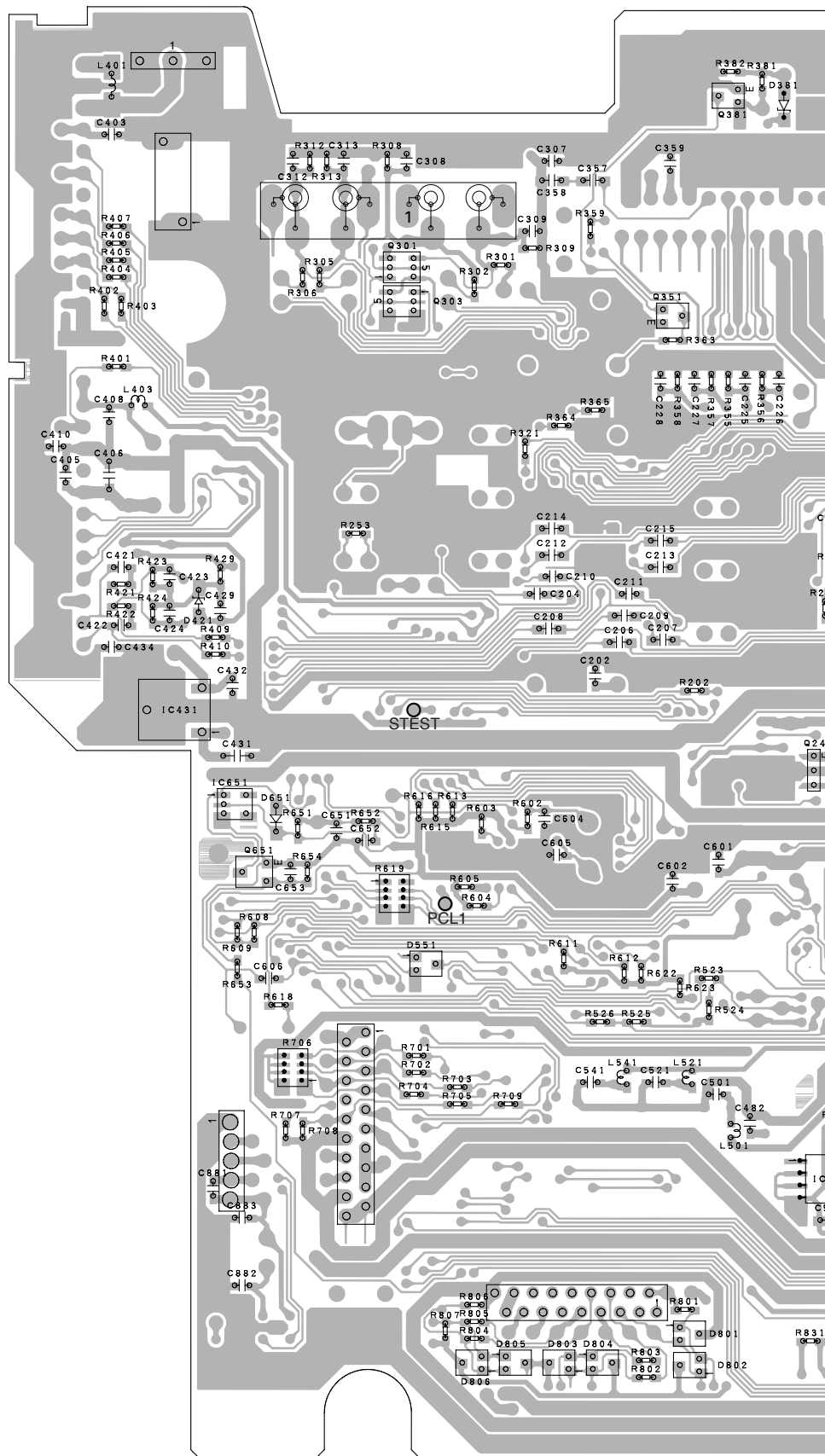
DEH-P75BT/XN/EW5

ID ASSY(POWER SUPPLY,SPEAKER)

SIDE A

A
B
C
D
E
F

A TUNER AMP UNIT



180 170 160 150 140 130 120 110 100

DEH-P75BT/XN/EW5

SIDE B

A

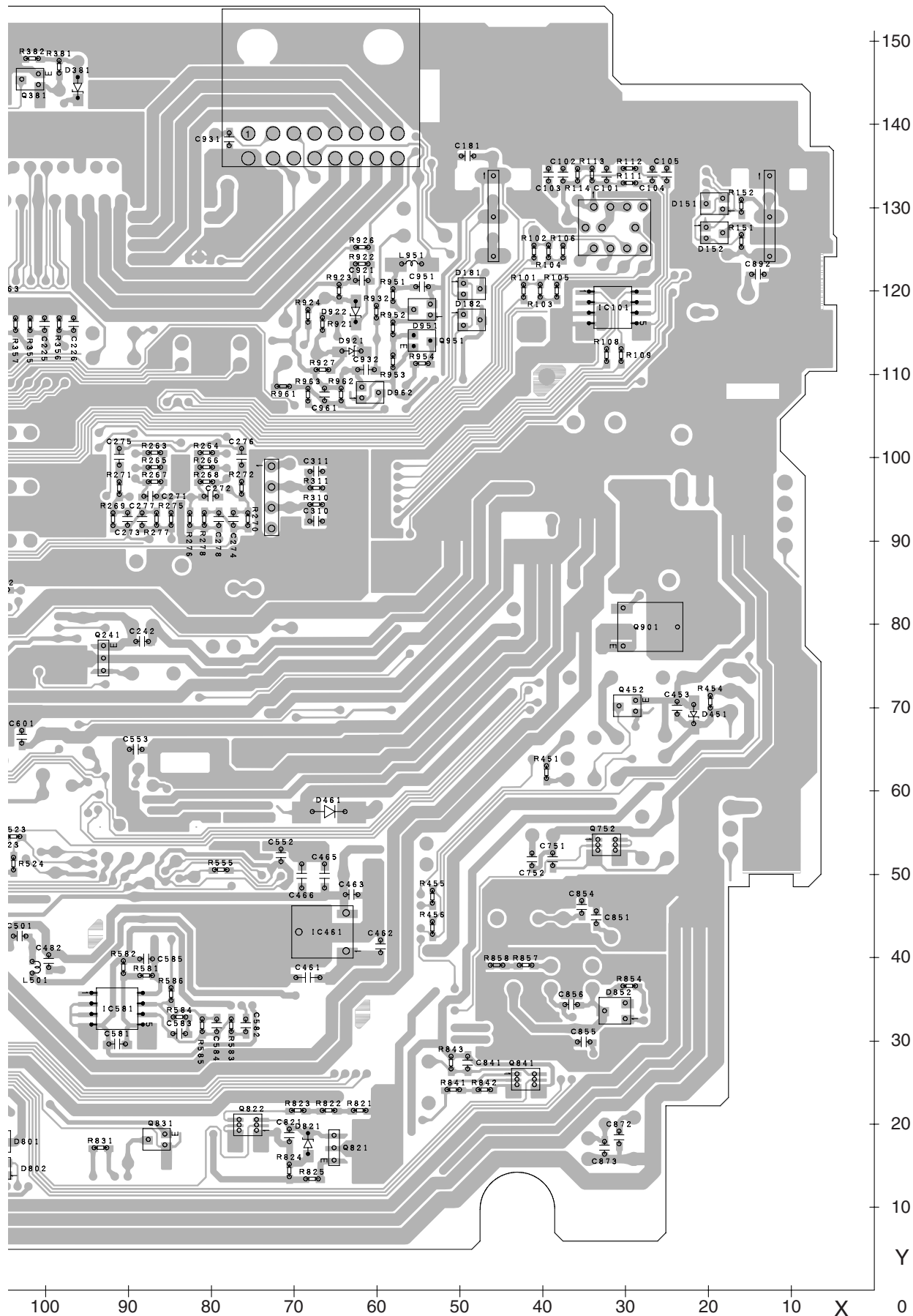
B

C

D

E

F



△

C



E



4

4.3 CD CORE UNIT(S10.5COMP1)

C CD CORE UNIT(S10.5COMP1)

SIDE A

A

PICKUP UNIT(P10.5)(SERVICE)

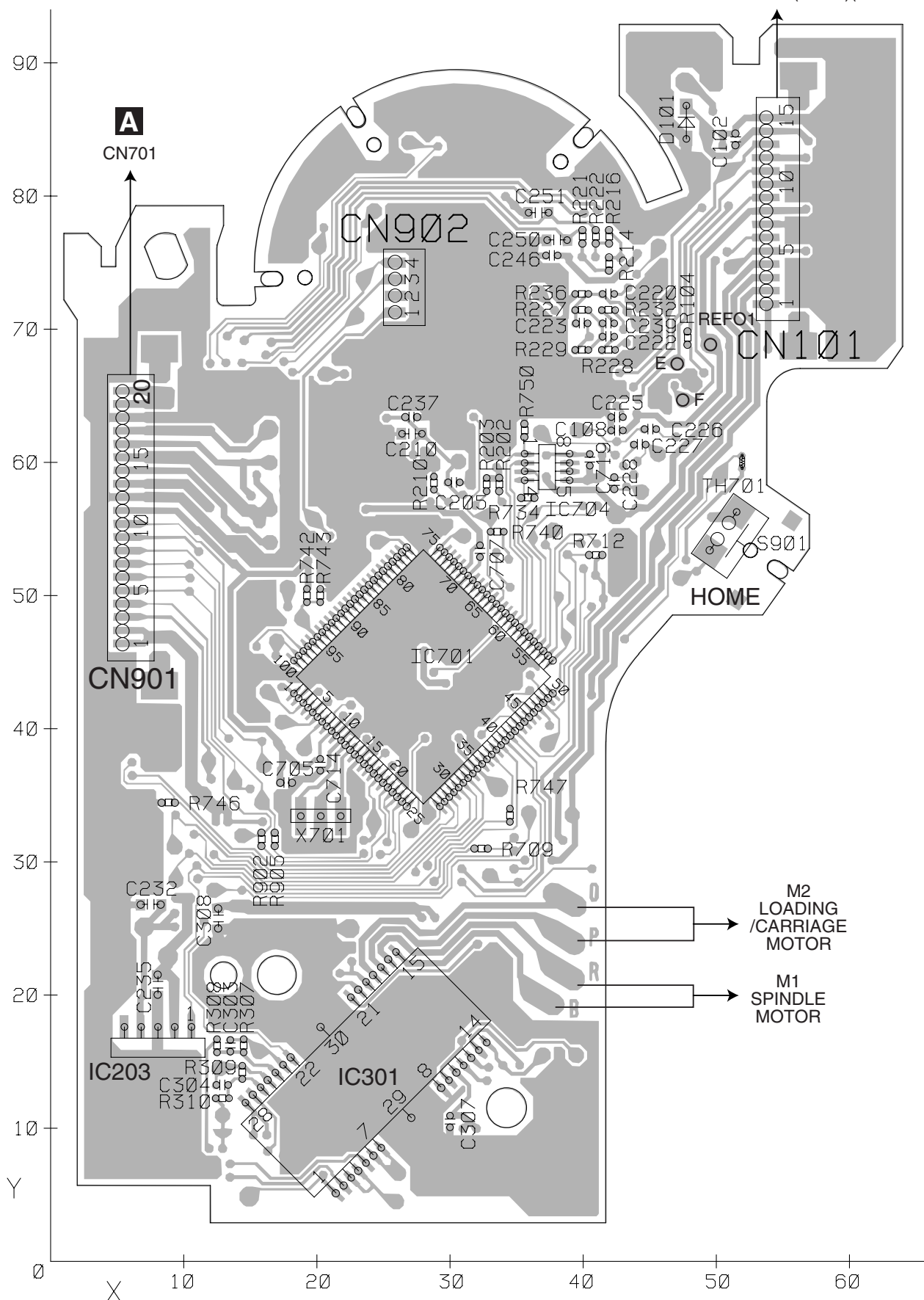
B

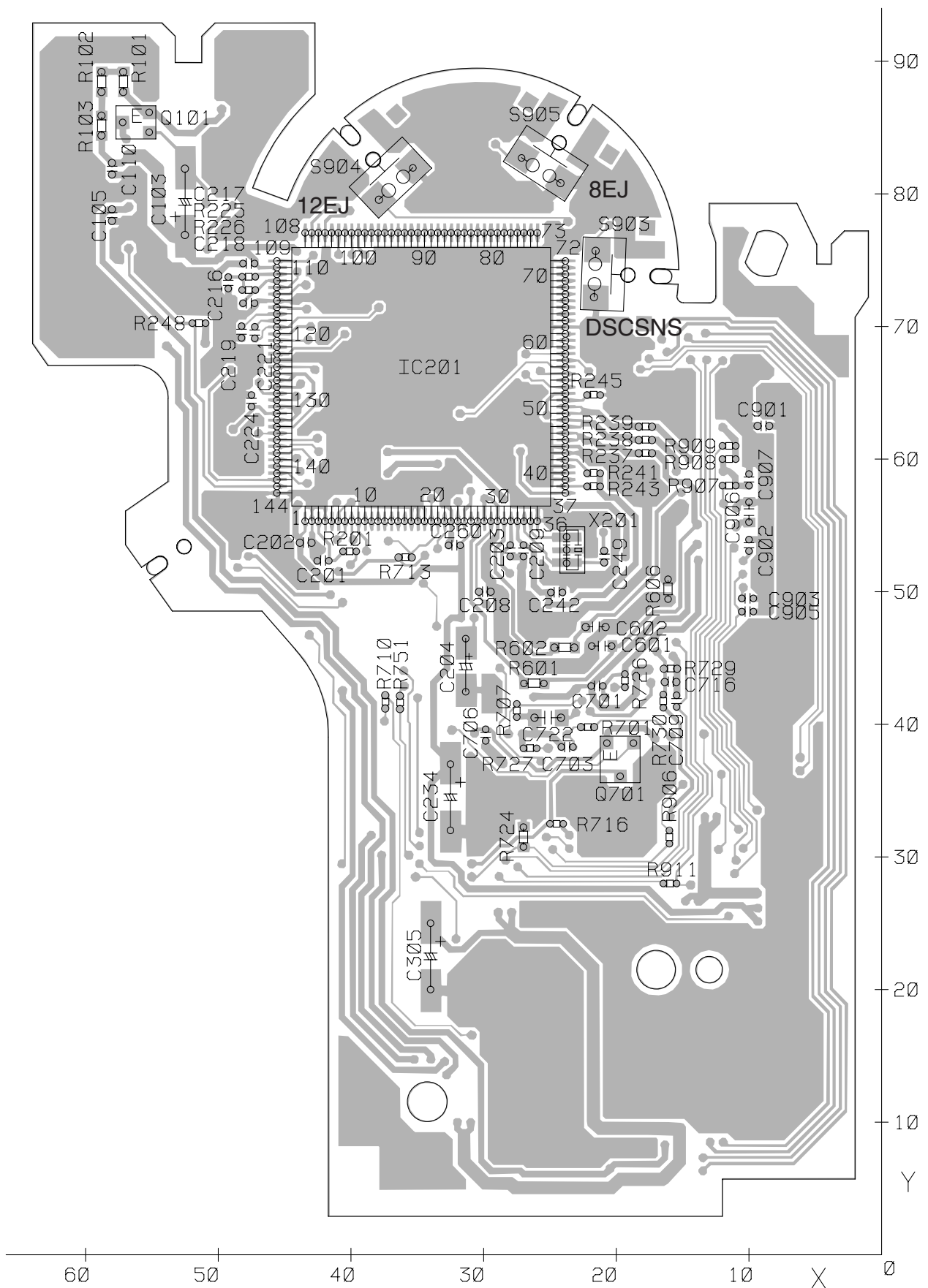
C

D

E

F

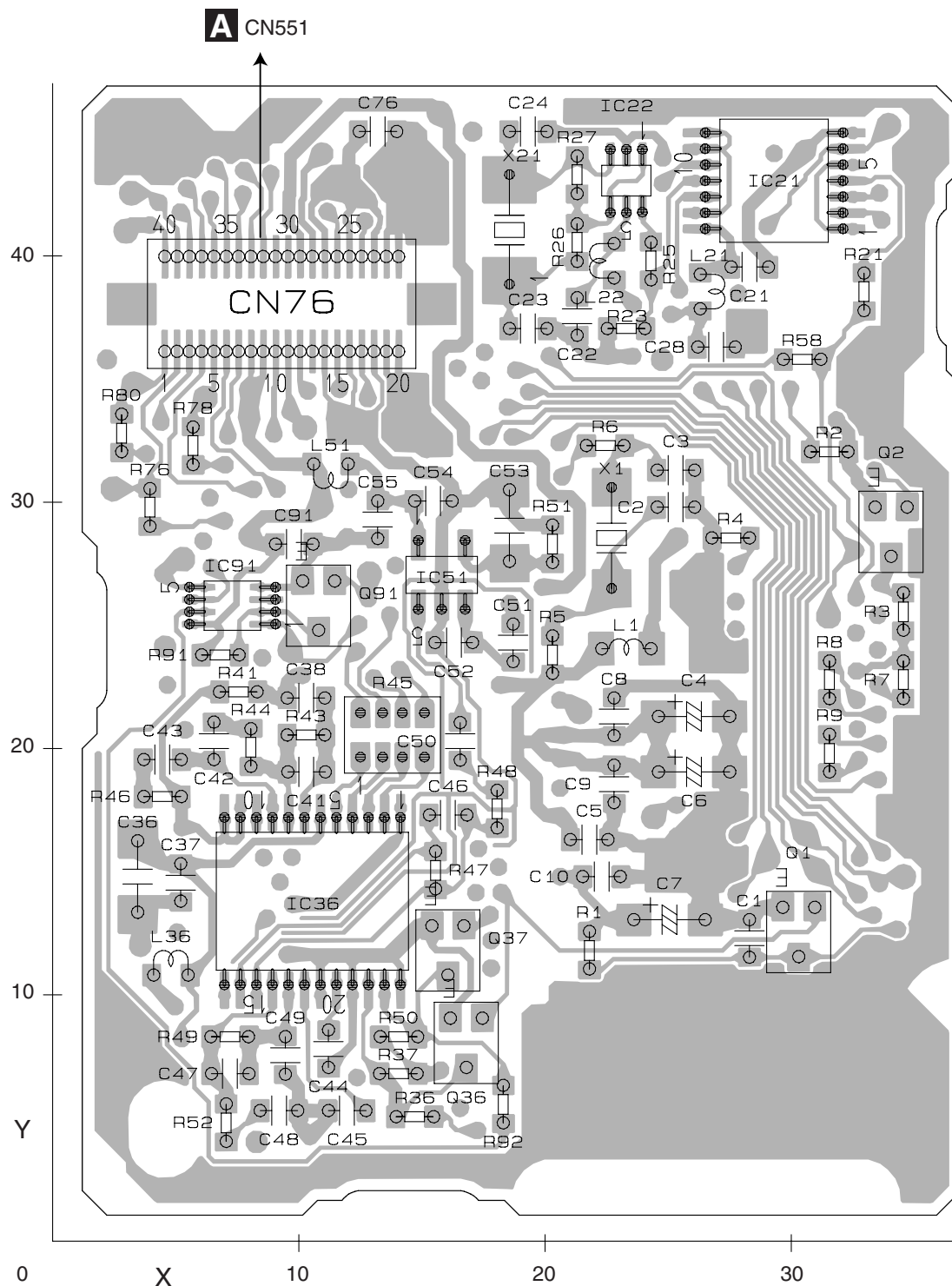


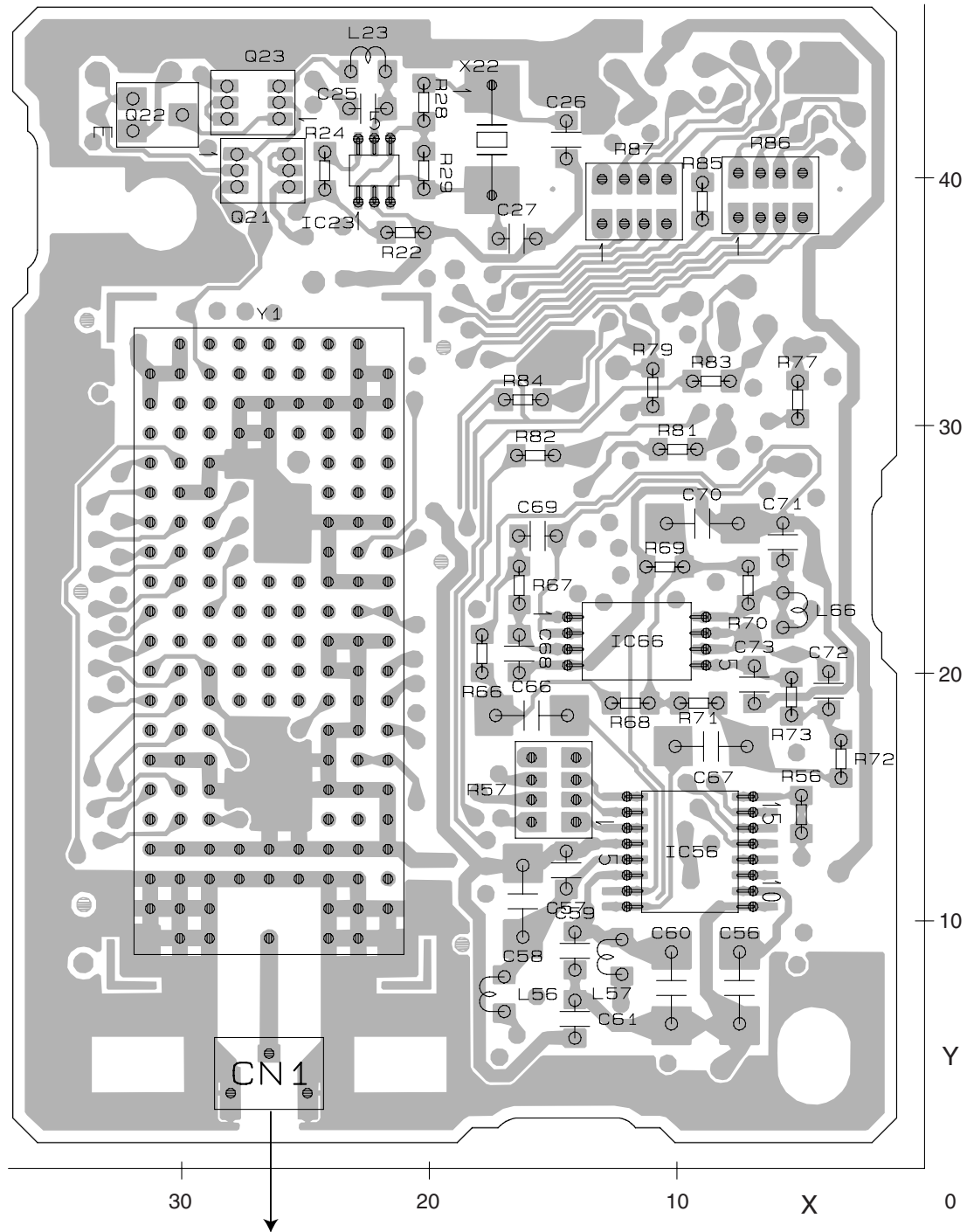


4.4 BLUETOOTH UNIT

E BLUETOOTH UNIT

SIDE A





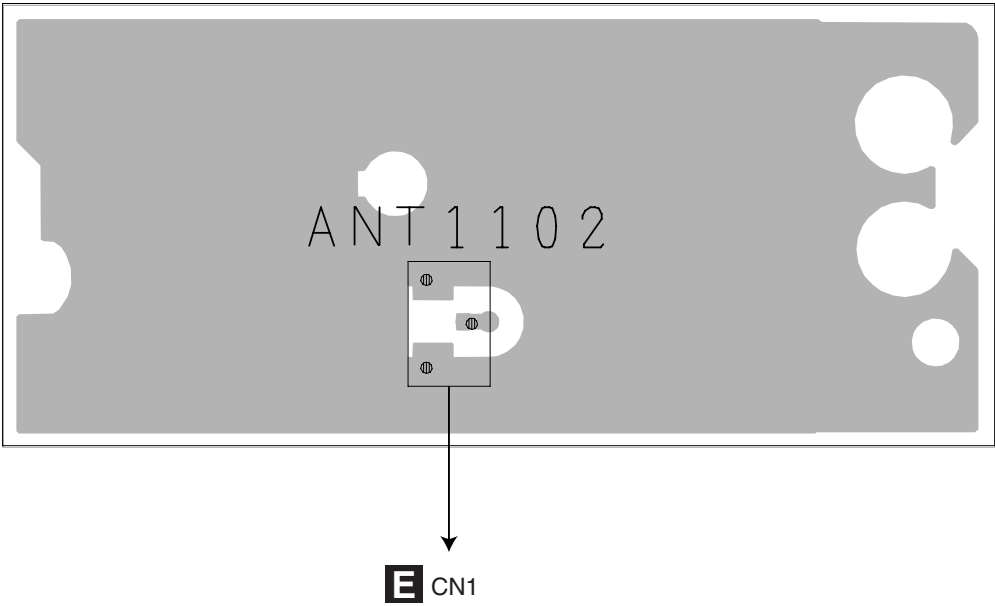
F ANT1102

1 2 3 4

4.5 ANTENNA UNIT

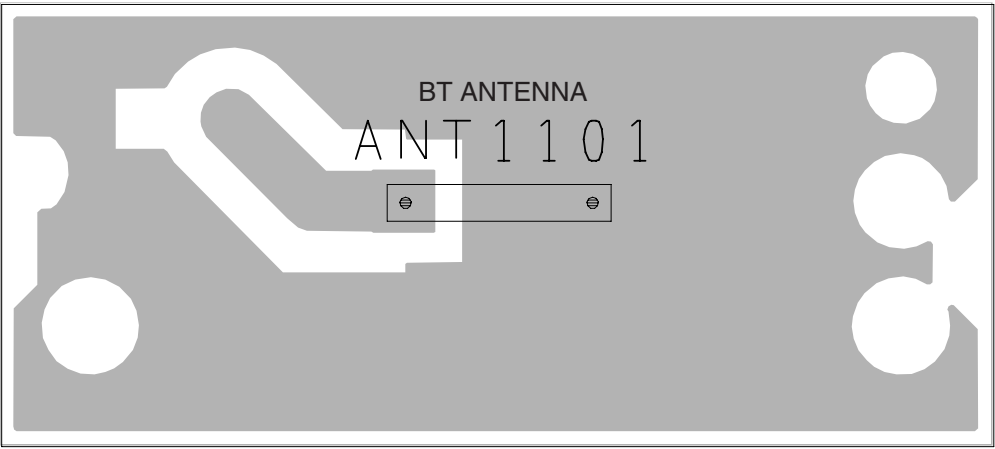
F ANTENNA UNIT

SIDE A



F ANTENNA UNIT

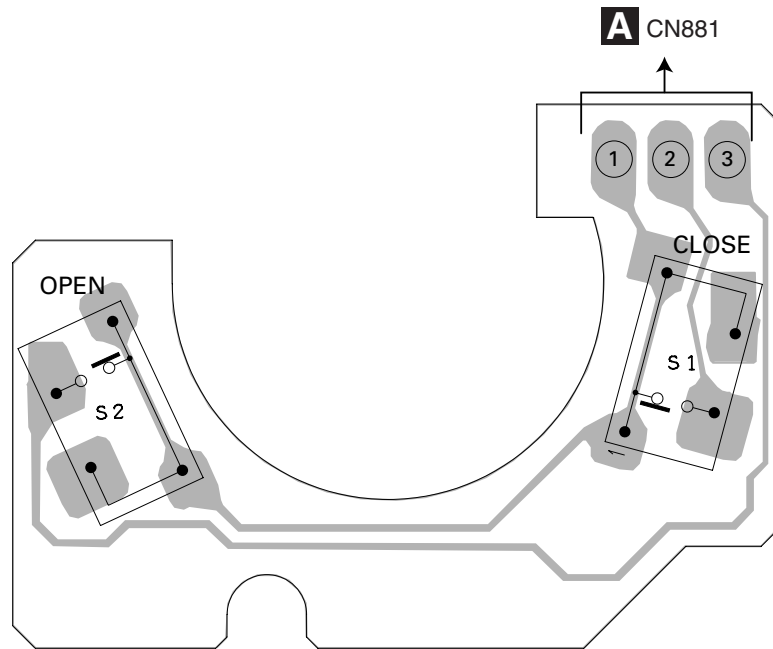
SIDE B



F

4.6 SWITCH UNIT

D SWITCH UNIT



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor

RS1/○○○○○J,RS1/○○○○○J

Chip Capacitor (except for CQS.....)

CKS....., CCS....., CSZS.....

- The \triangle mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Meaning of the figures and others in the parentheses in the parts list.

Example) IC 301 is on the point (face A, 91 of x-axis, and 111 of y-axis) of the corresponding PC board.

IC 301 (A, 91, 111) IC NJM2068V

Circuit Symbol and No.

Part No.

Circuit Symbol and No.

Part No.

Unit Number: CWN1771

Unit Name : Bluetooth Unit

Unit Number: CWN1425(DEH-P75BT/XN/EW5)

Unit Name : Tuner Amp Unit

Unit Number: CWN1426(DEH-P7850BT/XN/ES)

Unit Name : Tuner Amp Unit

Unit Number:

Unit Name : Keyboard Unit

Unit Number: CWS1389

Unit Name : Switch Unit

Unit Number: CWX3410

Unit Name : CD Core Unit(S10.5COMP1)

L 21	(A,26,39)	Inductor	CTF1379
L 22	(A,23,40)	Inductor	CTF1379
L 23	(B,23,44)	Inductor	CTF1379
L 36	(A,5,11)	Inductor	LCYC2R2K1608
L 51	(A,11,32)	Inductor	CTF1379
L 56	(B,17,7)	Inductor	CTF1379
L 57	(B,12,9)	Inductor	CTF1379
X 21	(A,19,41)	Resonator 11.289 6 MHz	CSS1670
X 22	(B,18,42)	Resonator 12.288 MHz	CSS1698
Y 1	(B,27,21)	Compound Unit	CWX3340

RESISTORS

R 1	(A,22,12)	RS1/16S334J
R 2	(A,32,32)	RS1/16S103J
R 3	(A,35,26)	RS1/16S473J
R 4	(A,28,29)	RS1/16S103J
R 5	(A,20,24)	RS1/16S103J
R 6	(A,22,32)	RS1/16S0R0J
R 7	(A,35,23)	RS1/16S103J
R 8	(A,32,23)	RS1/16S101J
R 9	(A,32,20)	RS1/16S103J
R 21	(A,33,39)	RS1/16S101J
R 22	(B,21,38)	RS1/16S473J
R 23	(A,23,37)	RS1/16S473J
R 24	(B,24,40)	RS1/16S101J
R 25	(A,24,40)	RS1/16S101J
R 26	(A,21,41)	RS1/16S332J
R 27	(A,21,43)	RS1/16S105J
R 28	(B,20,43)	RS1/16S332J
R 29	(B,20,40)	RS1/16S105J
R 36	(A,15,5)	RS1/16S103J
R 37	(A,14,7)	RS1/16S104J
R 41	(A,8,22)	RS1/16S103J
R 43	(A,10,21)	RS1/16S393J
R 44	(A,8,20)	RS1/16S393J
R 45	(A,14,21)	RAB4C101J
R 46	(A,4,18)	RS1/16S103J
R 47	(A,16,15)	RS1/16S203J
R 48	(A,18,18)	RS1/16S103J
R 49	(A,7,8)	RS1/16S203J
R 50	(A,14,8)	RS1/16S473J



Unit Number: CWN1771

Unit Name : Bluetooth Unit

MISCELLANEOUS

IC 21	(A,29,43)	IC	TC74VHC02FTS1
IC 22	(A,23,43)	IC	TC7PAU04FU
IC 23	(B,22,40)	IC	TC7PAU04FU
IC 36	(A,11,14)	IC	AK2301A
IC 51	(A,16,27)	IC	AN6123MS
IC 56	(B,10,13)	IC	PCM1742KE
IC 66	(B,12,21)	IC	NJM4558V
Q 1	(A,30,13)	Transistor	DTC124EUA
Q 2	(A,34,29)	Transistor	DTC124EUA
Q 21	(B,27,40)	Transistor	UMD2N
Q 22	(B,31,43)	Transistor	DTC124EUA
Q 23	(B,27,43)	Transistor	UMD2N
Q 36	(A,17,8)	Transistor	DTC124EUA
Q 37	(A,16,12)	Transistor	DTC124EUA
L 1	(A,23,24)	Inductor	CTF1394

Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
R 51	(A,20,28)	RS1/16S105J	C 56	(B,8,7)	CKSYB106K6R3
R 52	(A,7,5)	RS1/16S103J	C 57	(B,15,12)	CKSRYB102K50
R 57	(B,15,15)	RAB4C101J	C 58	(B,16,11)	CKSYB106K6R3
R 58	(A,30,36)	RS1/16S821J	C 59	(B,14,9)	CKSRYB102K50
R 66	(B,18,21)	RS1/16S103J	C 60	(B,10,7)	CKSYB106K6R3
R 67	(B,16,24)	RS1/16S103J	C 61	(B,14,6)	CKSRYB102K50
R 68	(B,12,19)	RS1/16S473J	C 66	(B,16,18)	CKSYB475K16
R 69	(B,11,24)	RS1/16S103J	C 67	(B,9,17)	CKSYB475K16
R 70	(B,7,24)	RS1/16S103J	C 68	(B,16,21)	CCSRCH221J50
R 71	(B,9,19)	RS1/16S473J	C 69	(B,16,26)	CCSRCH391J50
R 72	(B,3,17)	RS1/16S103J	C 70	(B,9,26)	CKSYB106K6R3
R 73	(B,5,19)	RS1/16S103J	C 71	(B,6,25)	CKSRYB105K10
R 76	(A,4,30)	RS1/16S101J	C 72	(B,4,19)	CCSRCH391J50
R 77	(B,5,31)	RS1/16S101J	C 73	(B,7,20)	CCSRCH221J50
R 78	(A,6,32)	RS1/16S101J	C 76	(A,13,45)	CKSRYB102K50
R 79	(B,11,32)	RS1/16S0R0J			
R 80	(A,3,33)	RS1/16S101J			
R 81	(B,10,29)	RS1/16S101J			
R 82	(B,16,29)	RS1/16S101J			
R 83	(B,9,32)	RS1/16S101J			
R 84	(B,16,31)	RS1/16S0R0J			
R 85	(B,9,39)	RS1/16S101J			
R 86	(B,6,39)	RAB4C101J			
R 87	(B,12,39)	RAB4C101J			
CAPACITORS			MISCELLANEOUS		
C 1	(A,28,12)	CKSRYB104K16	IC 101	(B,32,118) IC	HA12241FP
C 4	(A,26,21)	CSZS100M16	IC 201	(A,115,98) IC	PML016B
C 5	(A,22,16)	CKSRYB104K16	IC 261	(A,84,97) IC	BA3131FS
C 7	(A,25,13)	CSZS1R0M16	IC 351	(A,101,137) IC	PAL007B
C 8	(A,23,21)	CKSRYB104K16	IC 431	(B,161,82) IC	NJM2391DL1-33
C 9	(A,23,19)	CKSRYB104K16	IC 461	(B,68,43) IC	NJM2391DL1-33
C 10	(A,22,15)	CCSRCH101J50	IC 501	(A,102,43) IC	TC74VHCT08AFTS1
C 21	(A,28,40)	CKSRYB104K16	IC 521	(A,109,43) IC	TC74VHC08FTS1
C 22	(A,21,38)	CKSRYB105K10	IC 541	(A,116,43) IC	S99-50084
C 23	(A,19,37)	CCSRCH120J50	IC 571	(A,101,76) IC	NJM4558V
C 24	(A,19,45)	CCSRCH120J50	IC 581	(B,91,34) IC	NJM4558MD
C 25	(B,23,43)	CKSRYB105K10	IC 601	(A,130,70) IC	PEG262A
C 26	(B,15,42)	CCSRCH120J50	IC 651	(B,153,73) IC	BD4835G
C 27	(B,17,38)	CCSRCH120J50	IC 851	(A,33,30) IC	NJM2360M
C 28	(A,27,36)	CKSRYB102K50	IC 881	(A,149,19) IC	BA6288FS
C 36	(A,3,15)	CKSYB106K6R3	IC 911	(A,11,97) IC	NJM2388F84
C 37	(A,5,15)	CKSRYB104K16	Q 101	(A,30,122) Transistor	UMF23N
C 38	(A,10,22)	CKSRYB105K10	Q 241	(B,95,76) Transistor	2SD1767
C 41	(A,10,19)	CCSRCH101J50	Q 242	(A,87,70) Transistor	UMD2N
C 42	(A,7,20)	CKSRYB105K10	Q 261	(A,67,71) Transistor	DTC124EUA
C 43	(A,4,20)	CKSRYB105K10	Q 301	(B,136,128) Transistor	IMH23
C 44	(A,11,8)	CKSRYB334K10	Q 302	(A,72,105) Transistor	IMH23
C 45	(A,12,5)	CKSRYB105K10	Q 303	(B,136,125) Transistor	IMH23
C 46	(A,16,17)	CCSRCH101J50	Q 321	(A,109,110) Transistor	UMD2N
C 47	(A,7,7)	CCSRCH101J50	Q 351	(B,108,123) Transistor	DTC114EU
C 48	(A,9,5)	CKSRYB105K10	Q 352	(A,109,118) Transistor	DTC124EUA
C 49	(A,9,8)	CKSRYB105K10	Q 381	(B,102,146) Transistor	2SC4081
C 50	(A,17,20)	CKSRYB105K10	Q 401	(A,150,104) Transistor	UMH1N
C 51	(A,19,24)	CKSRYB334K10	Q 402	(A,155,104) Transistor	UMH1N
C 52	(A,16,24)	CCSRCH331J50	Q 451	(A,37,64) Transistor	2SB1243
C 53	(A,19,29)	CKSYB106K6R3	Q 452	(B,30,70) Transistor	DTC114EU
C 54	(A,15,30)	CKSRYB105K10	Q 453	(A,17,72) Transistor	2SD2396
C 55	(A,13,29)	CKSRYB104K16	Q 561	(A,76,72) Transistor	DTC314TU
			Q 651	(B,151,66) Transistor	2SC3052-12
			Q 751	(A,17,56) Transistor	2SD2396
			Q 752	(B,32,54) Transistor	UMD2N
			Q 821	(B,63,17) Transistor	2SD1767
			Q 822	(B,76,20) Transistor	UMD2N

A
Unit Number : CWN1425(DEH-P75BT/XN/EW5)
Unit Name : Tuner Amp Unit

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

Q 831 (B,87,18) Transistor
Q 841 (B,42,25) Transistor

DTC114EU
UMF23N

ZNR401 (A,159,144) Surge Protector
L 101 (A,28,119) Inductor
RCCA-201Q31UA-PI
LCTC1R0K1608

A Q 851 (A,24,44) Transistor
Q 852 (A,28,39) Transistor
Q 871 (A,45,20) Transistor
Q 872 (A,33,22) Transistor
Q 891 (A,18,113) Transistor

2SD1760F5
UMD2N
2SD1760F5
UMD2N
2SD1767

L 201 (A,109,80) Inductor
L 401 (B,166,147) Inductor
L 402 (A,162,118) Chip Coil
L 403 (B,163,114) Inductor
L 404 (A,161,97) Inductor
LCTAW2R2J2520
LCTAW220J2520
LCTAW1R0J2520
CTF1379
LCTAW2R2J2520

Q 892 (A,9,113) Transistor
Q 901 (B,26,80) Transistor
Q 902 (A,42,93) Transistor
Q 921 (A,66,113) Transistor
Q 931 (A,60,111) Transistor

UMD2N
2SD1760F5
UMD3N
UMX1N
RT1N141C-12

L 501 (B,102,39) Inductor
L 521 (B,106,44) Inductor
L 541 (B,112,44) Inductor
L 601 (A,100,65) Ferri-Inductor
L 701 (A,140,22) Ferri-Inductor
CTF1379
CTF1379
CTF1379
LAU100K
LAU100K

B Q 951 (B,55,114) Transistor
D 151 (B,19,131) Diode
D 152 (B,19,127) Diode
D 181 (B,49,121) Diode
D 182 (B,49,117) Diode

2SA1576
DAN202U
DAP202U
DAP202U
DAN202U

L 841 (A,54,25) Ferri-Inductor
L 851 (A,24,31) Inductor
L 852 (A,40,31) Chip Coil
L 881 (A,142,16) Inductor
L 951 (B,56,124) Inductor
LAU100K
CTF1660
LCTAW4R7J2520
LCTAW2R2J2520
LCTAW2R2J2520

D 241 (A,87,74) Diode
D 242 (A,130,86) Diode Network
D 251 (A,128,86) Diode Network
D 261 (A,67,68) Diode
D 321 (A,119,131) Diode

HZS12L(B1)
DA204U
DA204U
DAN202U
1SS133

X 601 (A,116,68) Crystal Resonator 20.000 MHz VSS1167
VR251 (A,134,103) Semi-fixed 10 k Ω (B) CCP1229
 Δ FU301 (A,145,121) Fuse 3 A CEK1286
 Δ FU302 (A,66,106) Fuse 3 A CEK1286
MIC251 (A,137,113) Microphone CPM1068

C D 381 (B,96,145) Diode
D 382 (A,109,115) Diode
D 431 (A,158,80) Diode
D 432 (A,166,80) Diode
D 433 (A,158,83) Diode

HZU8R2(B3)
DAN202U
1SR154-400
1SR154-400
1SR154-400

SP601 (A,150,50) Buzzer
M 891 Fan Motor
FM/AM Tuner Unit
CPV1062
CXM1288
CWE1951

RESISTORS

D 451 (B,22,69) Diode
D 452 (A,19,64) Diode
D 461 (B,66,58) Diode
D 551 (B,133,56) Diode
D 561 (A,78,71) Diode

UDZS5R6(B)
DAN202U
1SR154-400
DAN202U
1SS355

R 101 (B,42,120) RS1/16S102J
R 102 (B,41,125) RS1/16S102J
R 103 (B,40,120) RS1/16S223J
R 104 (B,39,125) RS1/16S223J
R 105 (B,38,120) RS1/16S181J

D 651 (B,149,71) Diode
D 751 (A,25,55) Diode
D 801 (B,106,18) Diode
D 802 (B,106,15) Diode
D 803 (B,119,15) Diode

1SS355
HZS7L(C3)
DAP202U
DAN202U
DAP202U

R 106 (B,38,125) RS1/16S181J
R 107 (A,27,122) RS1/16S222J
R 108 (B,32,113) RS1/16S101J
R 109 (B,31,113) RS1/16S102J
R 111 (B,30,133) RS1/16S101J

D 804 (B,115,15) Diode
D 805 (B,124,15) Diode
D 806 (B,128,15) Diode
D 821 (B,68,18) Diode
D 831 (A,91,11) LED

DAN202U
DAP202U
DAN202U
HZU10(B1)
SML412BC5T(MN)

R 112 (B,30,135) RS1/16S101J
R 113 (B,34,134) RS1/16S470J
R 114 (B,36,134) RS1/16S150J
R 115 (A,34,122) RS1/16S332J
R 116 (A,33,122) RS1/16S562J

D 851 (A,32,45) Diode
D 852 (B,31,34) Diode
D 871 (A,29,18) Diode
D 881 (A,152,28) Diode
D 882 (A,152,25) Diode

HZS11L(A1)
RB411D
HZS7L(B3)
1SS133
1SS133

R 151 (B,16,126) RS1/16S102J
R 152 (B,16,131) RS1/16S102J
R 201 (A,102,85) RS1/16S101J
R 202 (B,105,84) RS1/16S101J
R 203 (A,106,85) RAB4C102J

D 891 (A,13,112) Diode
D 901 (A,34,105) Diode
D 902 (A,28,91) Diode
D 921 (B,63,113) Diode
D 922 (B,63,118) Diode

UDZS12(B)
MPG06G-6415G50
UDZS5R6(B)
UDZS7R5(B)
HZU6R8(B2)

R 241 (A,84,70) RS1/16S182J
R 251 (A,127,84) RS1/16S104J
R 252 (A,128,89) RS1/16S104J
R 253 (B,140,101) RS1/16S222J
R 254 (A,134,100) RS1/16S561J

D 931 (A,54,127) Diode
D 941 (A,92,112) Diode
D 942 (A,92,115) Diode
D 951 (B,55,118) Diode
D 961 (A,71,114) Diode

MPG06G-6415G50
MPG06G-6415G50
MPG06G-6415G50
DAN202U
HZS7L(C2)

R 261 (A,91,98) RS1/16S103J
R 262 (A,77,98) RS1/16S103J
R 263 (B,87,101) RS1/16S473J
R 264 (B,81,101) RS1/16S473J
R 265 (B,87,99) RS1/16S473J

D 962 (B,61,108) Diode Network
D 981 (A,54,130) Diode
D 982 (A,76,133) Diode

DA204U
MPG06G-6415G50
MPG06G-6415G50

R 266 (B,81,99) RS1/16S473J
R 267 (B,87,97) RS1/16S103J

5			6			7			8		
<u>Circuit Symbol and No.</u>			<u>Part No.</u>			<u>Circuit Symbol and No.</u>			<u>Part No.</u>		
R 268	(B,81,97)		RS1/16S103J			R 502	(A,102,36)		RS1/16S681J		
R 269	(B,92,93)		RS1/16S103J			R 503	(A,103,49)		RAB4C681J		
R 270	(B,76,93)		RS1/16S103J			R 521	(A,109,36)		RAB4C681J		A
R 271	(B,91,97)		RS1/16S103J			R 522	(A,109,49)		RAB4C681J		
R 272	(B,76,97)		RS1/16S103J			R 523	(B,104,55)		RS1/16S182J		
R 273	(A,77,95)		RS1/16S102J			R 524	(B,104,51)		RS1/16S332J		
R 274	(A,77,94)		RS1/16S102J			R 525	(B,111,50)		RS1/16S332J		
R 275	(B,85,93)		RS1/16S183J			R 526	(B,115,50)		RS1/16S182J		
R 276	(B,83,93)		RS1/16S183J			R 541	(A,115,36)		RAB4C101J		
R 277	(B,87,93)		RS1/16S223J			R 542	(A,116,49)		RS1/16S101J		
R 278	(B,81,93)		RS1/16S223J			R 543	(A,117,49)		RS1/16S101J		
R 281	(A,70,71)		RS1/16S103J			R 551	(A,72,73)		RS1/16S220J		
R 301	(B,125,128)		RS1/16S390J			R 552	(A,72,75)		RS1/16S102J		
R 302	(B,128,126)		RS1/16S390J			R 561	(A,76,69)		RS1/16S102J		B
R 303	(A,74,108)		RS1/16S390J			R 562	(A,80,72)		RS1/16S223J		
R 304	(A,69,105)		RS1/16S390J			R 571	(A,104,70)		RS1/16S473J		
R 305	(B,144,127)		RS1/16S390J			R 572	(A,106,73)		RS1/16S102J		
R 306	(B,146,127)		RS1/16S390J			R 573	(A,102,70)		RS1/16S473J		
R 308	(B,137,139)		RS1/16S223J			R 574	(A,105,81)		RS1/16S103J		
R 309	(B,122,130)		RS1/16S223J			R 575	(A,105,79)		RS1/16S473J		
R 310	(B,67,95)		RS1/16S223J			R 576	(A,81,68)		RS1/16S473J		
R 311	(B,67,97)		RS1/16S223J			R 577	(A,100,71)		RS1/16S473J		
R 312	(B,145,139)		RS1/16S223J			R 578	(A,104,77)		RS1/16S103J		
R 313	(B,143,139)		RS1/16S223J			R 579	(A,101,82)		RS1/16S103J		
R 321	(B,123,109)		RS1/16S102J			R 581	(B,88,38)		RS1/16S103J		C
R 351	(A,100,112)		RS1/16S182J			R 582	(B,91,39)		RS1/16S103J		
R 352	(A,98,112)		RS1/16S182J			R 583	(B,78,32)		RS1/16S153J		
R 353	(A,102,112)		RS1/16S182J			R 584	(B,84,33)		RS1/16S333J		
R 354	(A,104,112)		RS1/16S182J			R 585	(B,81,32)		RS1/16S823J		
R 355	(B,102,116)		RS1/16S272J			R 586	(B,85,36)		RS1/16S101J		
R 356	(B,98,116)		RS1/16S272J			R 601	(A,118,78)		RS1/16S104J		
R 357	(B,104,116)		RS1/16S272J			R 602	(B,123,71)		RS1/16S681J		
R 358	(B,107,116)		RS1/16S272J			R 603	(B,127,71)		RS1/16S473J		
R 359	(B,116,132)		RS1/16S153J			R 604	(B,128,62)		RS1/16S472J		
R 360	(A,108,123)		RS1/16S103J			R 605	(B,129,64)		RS1/16S472J		
R 361	(A,108,121)		RS1/16S331J			R 606	(A,127,55)		RS1/16S101J		D
R 362	(A,108,120)		RS1/16S103J			R 607	(A,137,57)		RAB4C681J		
R 363	(B,108,121)		RS1/16S101J			R 608	(B,151,59)		RS1/16S104J		
R 364	(B,119,112)		RS1/16S472J			R 609	(B,153,59)		RS1/16S104J		
R 365	(B,116,113)		RS1/16S472J			R 610	(A,142,69)		RAB4C681J		
R 381	(B,98,147)		RS1/16S104J			R 611	(B,119,57)		RS1/16S104J		
R 382	(B,102,148)		RS1/16S473J			R 612	(B,113,55)		RS1/16S104J		
R 383	(A,108,113)		RS1/16S472J			R 613	(B,130,72)		RS1/16S104J		
R 384	(A,130,89)		RS1/16S473J			R 614	(A,133,85)		RS1/16S473J		
R 401	(B,165,118)		RS1/16S681J			R 615	(B,132,72)		RS1/16S103J		
R 402	(B,166,124)		RS1/16S681J			R 616	(B,134,72)		RS1/16S223J		
R 403	(B,165,124)		RS1/16S681J			R 617	(A,112,55)		RS1/16S0R0J		E
R 404	(B,165,127)		RS1/16S681J			R 618	(B,148,52)		RS1/16S102J		
R 405	(B,165,129)		RS1/16S681J			R 619	(B,136,63)		RAB4C681J		
R 406	(B,165,131)		RS1/16S681J			R 621	(A,108,54)		RS1/16S104J		
R 407	(B,165,132)		RS1/16S681J			R 623	(B,107,54)		RS1/16S104J		
R 408	(A,153,110)		RAB4C223J			R 624	(A,142,67)		RS1/16S104J		
R 409	(B,155,90)		RS1/16S0R0J			R 625	(A,112,73)		RS1/16S473J		
R 410	(B,155,88)		RS1/16S0R0J			R 641	(A,141,93)		RS1/16S104J		
R 451	(B,40,62)		RS1/16S223J			R 651	(B,146,70)		RS1/16S183J		
R 452	(A,34,64)		RD1/4PU152J			R 652	(B,139,71)		RS1/16S102J		
R 453	(A,31,64)		RD1/4PU0R0J			R 653	(B,153,56)		RS1/16S222J		F
R 454	(B,20,71)		RS1/16S472J			R 654	(B,145,66)		RS1/16S473J		
R 455	(B,53,47)		RS1/16S0R0J			R 701	(B,134,47)		RS1/16S221J		
R 501	(A,100,36)		RS1/16S681J			R 702	(B,134,45)		RS1/16S221J		

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

A	R 703	(B,130,43)	RS1/16S221J				
	R 704	(B,134,43)	RS1/16S221J	C 103	(B,39,134)	CKSRYB104K16	
	R 705	(B,130,42)	RS1/16S221J	C 106	(A,32,119)	CKSRYB104K16	
	R 706	(B,147,45)	RAB4C682J	C 181	(B,49,137)	CKSRYB473K50	
	R 707	(B,148,39)	RS1/16S473J	C 201	(A,112,85)	CEAL470M10	
	R 708	(B,146,39)	RS1/16S104J	C 202	(B,116,86)	CKSRYB104K16	
	R 709	(B,125,42)	RS1/16S102J	C 203	(A,118,90)	CKSRYB474K10	
	R 751	(A,28,55)	RD1/4PU271J	C 204	(B,122,94)	CKSRYB474K10	
	R 801	(B,106,20)	RS1/16S222J	C 205	(A,121,85)	CEAL100M25	
	R 802	(B,110,13)	RS1/16S222J	C 206	(B,113,89)	CKSQYB225K10	
B	R 803	(B,110,15)	RS1/16S222J	C 207	(B,109,90)	CKSQYB225K10	
	R 804	(B,128,17)	RS1/16S222J	C 208	(B,120,91)	CKSQYB225K10	
	R 805	(B,128,19)	RS1/16S222J	C 209	(B,113,92)	CKSQYB225K10	
	R 806	(B,128,21)	RS1/16S104J	C 210	(B,120,96)	CKSRYB104K16	
	R 807	(B,131,18)	RS1/16S104J	C 211	(B,112,94)	CKSRYB104K16	
	R 811	(A,135,19)	RS1/16S104J	C 212	(B,120,98)	CKSQYB225K10	
	R 821	(B,62,22)	RS1/16S121J	C 213	(B,109,97)	CKSQYB225K10	
	R 822	(B,66,22)	RS1/16S121J	C 214	(B,120,101)	CKSQYB225K10	
	R 823	(B,70,22)	RS1/16S121J	C 215	(B,109,100)	CKSQYB225K10	
	R 824	(B,71,14)	RS1/16S473J	C 216	(A,126,98)	CEALNP4R7M35	
C	R 825	(B,68,13)	RS1/16S1R0J	C 217	(A,103,90)	CEALNP4R7M35	
	R 831	(B,93,17)	RS1/16S331J	C 218	(A,126,104)	CEALNP4R7M35	
	R 841	(B,51,24)	RS1/16S472J	C 219	(A,103,97)	CEALNP4R7M35	
	R 842	(B,47,24)	RS1/16S102J	C 220	(A,126,111)	CEALNP4R7M35	
	R 843	(B,51,27)	RS1/16S472J	C 221	(A,103,103)	CEALNP4R7M35	
	R 851	(A,21,38)	RS1/16S331J	C 222	(A,115,111)	CEAL100M25	
	R 852	(A,24,38)	RS1/16S331J	C 241	(A,87,72)	CKSRYB103K50	
	R 853	(A,42,41)	RS1/16S1R0J	C 242	(B,88,78)	CKSRYB104K16	
	R 854	(B,30,37)	RS1/16S391J	C 243	(A,88,80)	CEAL470M10	
	R 855	(A,37,36)	RD1/4PU272J	C 251	(A,133,95)	CEALNP100M16	
D	R 856	(A,37,39)	RD1/4PU272J	C 252	(A,140,98)	CEAL220M16	
	R 857	(B,42,39)	RS1/16S101J	C 253	(A,140,105)	CEAL100M25	
	R 871	(A,37,22)	RS1/16S471J	C 254	(A,130,84)	CCSRCH470J50	
	R 872	(A,35,22)	RS1/16S471J	C 261	(A,83,83)	CKSRYB103K50	
	R 881	(A,149,39)	RAB4C102J	C 262	(A,82,87)	CEAL100M25	
	R 885	(A,154,17)	RS1/16S103J	C 263	(A,90,88)	CEAL220M10	
	R 886	(A,155,20)	RS1/16S563J	C 264	(A,74,85)	CEAL101M10	
	R 891	(A,11,116)	RS1/16S101J	C 265	(A,90,105)	CKSQYB225K10	
	R 892	(A,9,118)	RS1/16S101J	C 266	(A,77,105)	CKSQYB225K10	
	R 893	(A,9,121)	RS1/16S101J	C 267	(A,91,102)	CKSQYB225K10	
E	R 894	(A,19,116)	RS1/16S1R0J	C 268	(A,77,102)	CKSQYB225K10	
	R 901	(A,43,89)	RS1/16S221J	C 269	(A,86,103)	CKSRYB104K16	
	R 902	(A,43,91)	RS1/16S221J	C 270	(A,81,103)	CKSRYB104K16	
	R 903	(A,40,90)	RS1/16S223J	C 271	(B,87,96)	CCSRCH470J50	
	R 911	(A,15,91)	RS1/16S473J	C 272	(B,80,96)	CCSRCH470J50	
	R 921	(B,67,116)	RS1/16S104J	C 273	(B,90,93)	CCSRCH470J50	
	R 922	(B,62,124)	RS1/16S472J	C 274	(B,77,93)	CCSRCH470J50	
	R 923	(B,65,120)	RS1/16S223J	C 275	(B,91,100)	CKSQYB225K10	
	R 924	(B,68,117)	RS1/16S103J	C 276	(B,76,100)	CKSQYB225K10	
	R 926	(B,62,126)	RS1/16S102J	C 277	(B,88,93)	CCSRCH470J50	
F	R 927	(B,67,111)	RS1/16S473J	C 278	(B,79,93)	CCSRCH470J50	
	R 932	(B,60,118)	RS1/16S103J	C 301	(A,124,126)	CEAL100M25	
	R 951	(B,58,120)	RS1/16S153J	C 302	(A,131,126)	CEAL100M25	
	R 952	(B,58,116)	RS1/16S472J	C 303	(A,77,113)	CEAL100M25	
	R 953	(B,58,112)	RS1/16S472J	C 304	(A,84,113)	CEAL100M25	
	R 954	(B,55,112)	RS1/16S102J	C 305	(A,141,126)	CEAL100M25	
	R 962	(B,64,108)	RS1/16S153J	C 306	(A,148,126)	CEAL100M25	
	R 963	(B,68,108)	RS1/16S102J	C 321	(A,124,118)	CEAL220M35	
				C 351	(A,104,116)	CKSRYB474K10	
				C 352	(A,102,116)	CKSRYB474K10	
				C 353	(A,100,116)	CKSRYB474K10	

CAPACITORS

5			6			7			8		
<u>Circuit Symbol and No.</u>			<u>Part No.</u>			<u>Circuit Symbol and No.</u>			<u>Part No.</u>		
C 354	(A,98,116)		CKSRYB474K10			C 821	(B,71,19)		CKSRYB473K50		
C 356	(A,114,125)		CEAL100M25			C 831	(A,91,13)		CKSRYB104K16		A
C 357	(B,116,137)		CKSQYB225K10			C 841	(B,49,27)		CCSRCH101J50		
C 358	(B,120,137)		CKSQYB225K10			C 842	(A,54,19)		CKSRYB473K50		
C 359	(B,108,139)		CKSRYB104K16			C 851	(B,34,45)		CKSRYB104K16		
C 360	(A,81,127)	3 300 μ F/16 V	CCH1486			C 852	(A,46,46)		CEJQ470M25		
C 361	(A,104,119)		CKSQYB474K16			C 853	(A,38,46)		CEAL101M10		
C 362	(A,102,119)		CKSQYB474K16			C 854	(B,35,46)		CKSRYB104K16		
C 363	(A,100,119)		CKSQYB474K16			C 855	(B,35,30)		CCSRCH331J50		
C 364	(A,98,119)		CKSQYB474K16			C 856	(B,37,34)		CKSRYB103K50		
C 367	(A,115,118)		CEHAR330M10			C 857	(A,45,36)		CEJQ470M25		
C 401	(A,162,115)		CKSRYB104K16			C 858	(A,44,30)	4.7 μ F	CCG1111		
C 402	(A,156,117)		CEAL101M10			C 872	(B,31,18)		CKSRYB224K10		B
C 403	(B,166,142)		CKSRYB103K50			C 873	(B,33,17)		CKSRYB104K16		
C 404	(A,160,142)		CEJQ470M10			C 874	(A,35,17)		CEJQ220M25		
C 405	(B,170,107)		CKSRYB103K50			C 881	(B,155,33)		CCSRCH102J50		
C 407	(A,160,110)		CEJQ470M10			C 882	(B,152,23)		CCSRCH101J50		
C 408	(B,166,113)		CKSRYB103K50			C 883	(B,152,30)		CCSRCH101J50		
C 409	(A,147,89)		CCSRCH101J50			C 884	(A,154,20)		CKSRYB103K50		
C 410	(B,171,110)		CCSRCH101J50			C 885	(A,143,19)		CKSRYB105K10		
C 431	(B,153,78)		CKSYB475K16			C 891	(A,11,113)		CKSRYB103K50		
C 432	(B,153,85)		CKSRYB103K50			C 892	(B,14,122)		CKSRYB103K50		
C 433	(A,160,88)		CEJQ220M25			C 893	(A,14,120)		CEAL100M25		
C 434	(B,166,89)		CKSRYB102K50			C 901	(A,22,86)	470 μ F/16 V	CCH1339		
C 451	(A,34,74)	470 μ F/16 V	CCH1339			C 902	(A,34,85)	470 μ F/16 V	CCH1339		C
C 452	(A,25,66)		CEHAS101M10			C 903	(A,28,92)		CKSRYB103K50		
C 453	(B,24,70)		CKSRYB103K50			C 904	(A,39,80)		CKSRYB104K25		
C 454	(A,24,74)		CEHAS101M10			C 905	(A,44,81)		CEAL101M10		
C 461	(B,68,38)		CKSYB475K16			C 906	(A,34,97)	470 μ F/16 V	CCH1339		
C 462	(B,60,41)		CKSRYB103K50			C 911	(A,22,103)	100 μ F/25 V	CCH1316		
C 463	(B,63,48)		CKSRYB103K50			C 912	(A,15,93)		CKSRYB103K50		
C 464	(A,54,53)		CEAL220M16			C 913	(A,22,95)		CEHAS101M10		
C 465	(B,66,50)		CKSYB106K6R3			C 921	(B,62,122)		CKSRYB104K25		
C 466	(B,69,50)		CKSYB106K6R3			C 931	(B,78,139)		CKSRYB473K50		
C 482	(B,100,40)		CKSRYB102K50			C 932	(B,61,111)		CKSQYB105K16		D
C 501	(B,103,43)		CKSRYB104K16			C 941	(A,89,119)		CKSRYB473K50		
C 521	(B,109,44)		CKSRYB104K16			C 951	(B,55,121)		CKSRYB104K25		
C 541	(B,116,44)		CKSRYB104K16			C 961	(B,66,108)		CKSRYB104K16		
C 551	(A,79,78)		CEAL330M6R3			<div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px 5px; margin-right: 5px;">A</div> <div> Unit Number : CWN1426(DEH-P7850BT/XN/ES) Unit Name : Tuner Amp Unit </div> </div>					
C 571	(A,98,76)		CKSRYB104K16								
C 572	(A,104,73)		CKSRYB105K10								
C 573	(A,81,69)		CKSRYB105K10								
C 574	(A,100,70)		CCSRCH470J50			MISCELLANEOUS					
C 575	(A,101,81)		CCSRCH470J50			IC 101	(B,32,118)	IC	HA12241FP		E
C 581	(B,91,30)		CKSQYB225K10			IC 201	(A,115,98)	IC	PML016B		
C 582	(B,76,32)		CKSRYB104K16			IC 261	(A,84,97)	IC	BA3131FS		
C 583	(B,84,31)		CKSRYB682K50			IC 351	(A,101,137)	IC	PAL007B		
C 584	(B,79,32)		CKSRYB331K50			IC 431	(B,161,82)	IC	NJM2391DL1-33		
C 585	(B,88,40)		CKSRYB103K50			IC 461	(B,68,43)	IC	NJM2391DL1-33		
C 602	(B,108,65)		CKSRYB103K50			IC 501	(A,102,43)	IC	TC74VHCT08AFTS1		
C 603	(A,105,65)		CEAL4R7M50			IC 521	(A,109,43)	IC	TC74VHC08FTS1		
C 604	(B,121,71)		CCSRCH100D50			IC 541	(A,116,43)	IC	S99-50084		
C 605	(B,120,67)		CCSRCH100D50			IC 571	(A,101,76)	IC	NJM4558V		
C 606	(B,149,55)		CCSRCH470J50			IC 581	(B,91,34)	IC	NJM4558MD		F
C 651	(B,142,70)		CKSRYB105K10			IC 601	(A,130,70)	IC	PEG263A		
C 653	(B,147,66)		CKSRYB104K16			IC 651	(B,153,73)	IC	BD4835G		
C 701	(A,142,25)		CCSRCH101J50			IC 851	(A,33,30)	IC	NJM2360M		
C 751	(B,39,52)		CKSRYB473K50			IC 881	(A,149,19)	IC	BA6288FS		
C 752	(B,41,52)		CKSRYB102K50								
C 753	(A,40,55)		CEAT221M10								

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

A IC 911 (A,11,97) IC NJM2388F84
 Q 101 (A,30,122) Transistor UMF23N
 Q 241 (B,95,76) Transistor 2SD1767
 Q 242 (A,87,70) Transistor UMD2N
 Q 261 (A,67,71) Transistor DTC124EUA

D 851 (A,32,45) Diode HZS11L(A1)
 D 852 (B,31,34) Diode RB411D
 D 871 (A,29,18) Diode HZS7L(B3)
 D 881 (A,152,28) Diode 1SS133
 D 882 (A,152,25) Diode 1SS133

Q 301 (B,136,128) Transistor IMH23
 Q 302 (A,72,105) Transistor IMH23
 Q 303 (B,136,125) Transistor IMH23
 Q 321 (A,109,110) Transistor UMD2N
 Q 351 (B,108,123) Transistor DTC114EU

D 891 (A,13,112) Diode UDZS12(B)
 D 901 (A,34,105) Diode MPG06G-6415G50
 D 902 (A,28,91) Diode UDZS5R6(B)
 D 921 (B,63,113) Diode UDZS7R5(B)
 D 922 (B,63,118) Diode HZU6R8(B2)

B Q 352 (A,109,118) Transistor DTC124EUA
 Q 381 (B,102,146) Transistor 2SC4081
 Q 451 (A,37,64) Transistor 2SB1243
 Q 452 (B,30,70) Transistor DTC114EU
 Q 453 (A,17,72) Transistor 2SD2396

D 931 (A,54,127) Diode MPG06G-6415G50
 D 941 (A,92,112) Diode MPG06G-6415G50
 D 942 (A,92,115) Diode MPG06G-6415G50
 D 951 (B,55,118) Diode DAN202U
 D 961 (A,71,114) Diode HZS7L(C2)

Q 561 (A,76,72) Transistor DTC314TU
 Q 651 (B,151,66) Transistor 2SC3052-12
 Q 751 (A,17,56) Transistor 2SD2396
 Q 752 (B,32,54) Transistor UMD2N
 Q 821 (B,63,17) Transistor 2SD1767

D 962 (B,61,108) Diode Network DA204U
 D 981 (A,54,130) Diode MPG06G-6415G50
 D 982 (A,76,133) Diode MPG06G-6415G50
 ZNR401 (A,159,144) Surge Protector RCCA-201Q31UA-PI
 L 101 (A,28,119) Inductor LTC1R0K1608

C Q 822 (B,76,20) Transistor UMD2N
 Q 831 (B,87,18) Transistor DTC114EU
 Q 841 (B,42,25) Transistor UMF23N
 Q 851 (A,24,44) Transistor 2SD1760F5
 Q 852 (A,28,39) Transistor UMD2N

L 201 (A,109,80) Inductor LCTAW2R2J2520
 L 401 (B,166,147) Inductor LCTAW220J2520
 L 402 (A,162,118) Chip Coil LCTAW1R0J2520
 L 403 (B,163,114) Inductor CTF1379
 L 404 (A,161,97) Inductor LCTAW2R2J2520

Q 871 (A,45,20) Transistor 2SD1760F5
 Q 872 (A,33,22) Transistor UMD2N
 Q 891 (A,18,113) Transistor 2SD1767
 Q 892 (A,9,113) Transistor UMD2N
 Q 901 (B,26,80) Transistor 2SD1760F5

L 501 (B,102,39) Inductor CTF1379
 L 521 (B,106,44) Inductor CTF1379
 L 541 (B,112,44) Inductor CTF1379
 L 601 (A,100,65) Ferri-Inductor LAU100K
 L 701 (A,140,22) Ferri-Inductor LAU100K

Q 902 (A,42,93) Transistor UMD3N
 Q 921 (A,66,113) Transistor UMX1N
 Q 931 (A,60,111) Transistor RT1N141C-12
 Q 951 (B,55,114) Transistor 2SA1576
 D 181 (B,49,121) Diode DAP202U

L 841 (A,54,25) Ferri-Inductor LAU100K
 L 851 (A,24,31) Inductor CTF1660
 L 852 (A,40,31) Chip Coil LCTAW4R7J2520
 L 881 (A,142,16) Inductor LCTAW2R2J2520
 L 951 (B,56,124) Inductor LCTAW2R2J2520

D 182 (B,49,117) Diode DAN202U
 D 241 (A,87,74) Diode HZS12L(B1)
 D 242 (A,130,86) Diode Network DA204U
 D 261 (A,67,68) Diode DAN202U
 D 321 (A,119,131) Diode 1SS133

X 601 (A,116,68) Crystal Resonator 20.000 MHz VSS1167
 ⚠FU301 (A,145,121) Fuse 3 A CEK1286
 ⚠FU302 (A,66,106) Fuse 3 A CEK1286
 SP601 (A,150,50) Buzzer CPV1062
 M 891 Fan Motor CXM1288

D 381 (B,96,145) Diode HZU8R2(B3)
 D 382 (A,109,115) Diode DAN202U
 D 431 (A,158,80) Diode 1SR154-400
 D 432 (A,166,80) Diode 1SR154-400
 D 433 (A,158,83) Diode 1SR154-400

FM/AM Tuner Unit CWE1952

RESISTORS

E D 451 (B,22,69) Diode UDZS5R6(B)
 D 452 (A,19,64) Diode DAN202U
 D 461 (B,66,58) Diode 1SR154-400
 D 551 (B,133,56) Diode DAN202U
 D 561 (A,78,71) Diode 1SS355

R 101 (B,42,120) RS1/16S102J
 R 102 (B,41,125) RS1/16S102J
 R 103 (B,40,120) RS1/16S223J
 R 104 (B,39,125) RS1/16S223J
 R 105 (B,38,120) RS1/16S181J

D 651 (B,149,71) Diode 1SS355
 D 751 (A,25,55) Diode HZS7L(C3)
 D 801 (B,106,18) Diode DAP202U
 D 802 (B,106,15) Diode DAN202U
 D 803 (B,119,15) Diode DAP202U

R 106 (B,38,125) RS1/16S181J
 R 107 (A,27,122) RS1/16S222J
 R 108 (B,32,113) RS1/16S101J
 R 109 (B,31,113) RS1/16S102J
 R 111 (B,30,133) RS1/16S101J

F D 804 (B,115,15) Diode DAN202U
 D 805 (B,124,15) Diode DAP202U
 D 806 (B,128,15) Diode DAN202U
 D 821 (B,68,18) Diode HZU10(B1)
 D 831 (A,91,11) LED SML412BC5T(MN)

R 112 (B,30,135) RS1/16S101J
 R 113 (B,34,134) RS1/16S470J
 R 114 (B,36,134) RS1/16S150J
 R 115 (A,34,122) RS1/16S332J
 R 116 (A,33,122) RS1/16S562J

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
R 201	(A,102,85)	RS1/16S101J		R 406	(B,165,131)	RS1/16S681J	
R 202	(B,105,84)	RS1/16S101J		R 407	(B,165,132)	RS1/16S681J	
R 203	(A,106,85)	RAB4C102J		R 409	(B,155,90)	RS1/16S0R0J	
R 241	(A,84,70)	RS1/16S182J		R 410	(B,155,88)	RS1/16S0R0J	A
R 261	(A,91,98)	RS1/16S103J		R 451	(B,40,62)	RS1/16S223J	
R 262	(A,77,98)	RS1/16S103J		R 452	(A,34,64)	RD1/4PU152J	
R 263	(B,87,101)	RS1/16S473J		R 453	(A,31,64)	RD1/4PU0R0J	
R 264	(B,81,101)	RS1/16S473J		R 454	(B,20,71)	RS1/16S472J	
R 265	(B,87,99)	RS1/16S473J		R 455	(B,53,47)	RS1/16S0R0J	
R 266	(B,81,99)	RS1/16S473J		R 501	(A,100,36)	RS1/16S681J	
R 267	(B,87,97)	RS1/16S103J		R 502	(A,102,36)	RS1/16S681J	
R 268	(B,81,97)	RS1/16S103J		R 503	(A,103,49)	RAB4C681J	
R 269	(B,92,93)	RS1/16S103J		R 521	(A,109,36)	RAB4C681J	
R 270	(B,76,93)	RS1/16S103J		R 522	(A,109,49)	RAB4C681J	
R 271	(B,91,97)	RS1/16S103J		R 523	(B,104,55)	RS1/16S182J	B
R 272	(B,76,97)	RS1/16S103J		R 524	(B,104,51)	RS1/16S332J	
R 273	(A,77,95)	RS1/16S102J		R 525	(B,111,50)	RS1/16S332J	
R 274	(A,77,94)	RS1/16S102J		R 526	(B,115,50)	RS1/16S182J	
R 275	(B,85,93)	RS1/16S183J		R 541	(A,115,36)	RAB4C101J	
R 276	(B,83,93)	RS1/16S183J		R 542	(A,116,49)	RS1/16S101J	
R 277	(B,87,93)	RS1/16S223J		R 543	(A,117,49)	RS1/16S101J	
R 278	(B,81,93)	RS1/16S223J		R 551	(A,72,73)	RS1/16S220J	
R 281	(A,70,71)	RS1/16S103J		R 552	(A,72,75)	RS1/16S102J	
R 301	(B,125,128)	RS1/16S390J		R 561	(A,76,69)	RS1/16S102J	
R 302	(B,128,126)	RS1/16S390J		R 562	(A,80,72)	RS1/16S223J	C
R 303	(A,74,108)	RS1/16S390J		R 571	(A,104,70)	RS1/16S473J	
R 304	(A,69,105)	RS1/16S390J		R 572	(A,106,73)	RS1/16S102J	
R 305	(B,144,127)	RS1/16S390J		R 573	(A,102,70)	RS1/16S473J	
R 306	(B,146,127)	RS1/16S390J		R 574	(A,105,81)	RS1/16S103J	
R 308	(B,137,139)	RS1/16S223J		R 575	(A,105,79)	RS1/16S473J	
R 309	(B,122,130)	RS1/16S223J		R 576	(A,81,68)	RS1/16S473J	
R 310	(B,67,95)	RS1/16S223J		R 577	(A,100,71)	RS1/16S473J	
R 311	(B,67,97)	RS1/16S223J		R 578	(A,104,77)	RS1/16S103J	
R 312	(B,145,139)	RS1/16S223J		R 579	(A,101,82)	RS1/16S103J	
R 313	(B,143,139)	RS1/16S223J		R 581	(B,88,38)	RS1/16S103J	
R 321	(B,123,109)	RS1/16S102J		R 582	(B,91,39)	RS1/16S103J	D
R 351	(A,100,112)	RS1/16S182J		R 583	(B,78,32)	RS1/16S153J	
R 352	(A,98,112)	RS1/16S182J		R 584	(B,84,33)	RS1/16S333J	
R 353	(A,102,112)	RS1/16S182J		R 585	(B,81,32)	RS1/16S823J	
R 354	(A,104,112)	RS1/16S182J		R 586	(B,85,36)	RS1/16S101J	
R 355	(B,102,116)	RS1/16S272J		R 601	(A,118,78)	RS1/16S104J	
R 356	(B,98,116)	RS1/16S272J		R 602	(B,123,71)	RS1/16S681J	
R 357	(B,104,116)	RS1/16S272J		R 603	(B,127,71)	RS1/16S473J	
R 358	(B,107,116)	RS1/16S272J		R 604	(B,128,62)	RS1/16S472J	
R 359	(B,116,132)	RS1/16S153J		R 605	(B,129,64)	RS1/16S472J	
R 360	(A,108,123)	RS1/16S103J		R 606	(A,127,55)	RS1/16S101J	
R 361	(A,108,121)	RS1/16S331J		R 607	(A,137,57)	RAB4C681J	
R 362	(A,108,120)	RS1/16S103J		R 608	(B,151,59)	RS1/16S104J	
R 363	(B,108,121)	RS1/16S101J		R 609	(B,153,59)	RS1/16S104J	
R 364	(B,119,112)	RS1/16S472J		R 610	(A,142,69)	RAB4C681J	
R 365	(B,116,113)	RS1/16S472J		R 611	(B,119,57)	RS1/16S104J	
R 381	(B,98,147)	RS1/16S104J		R 612	(B,113,55)	RS1/16S104J	
R 382	(B,102,148)	RS1/16S473J		R 613	(B,130,72)	RS1/16S104J	
R 383	(A,108,113)	RS1/16S472J		R 614	(A,133,85)	RS1/16S473J	
R 384	(A,130,89)	RS1/16S473J		R 615	(B,132,72)	RS1/16S103J	
R 401	(B,165,118)	RS1/16S681J		R 616	(B,134,72)	RS1/16S223J	
R 402	(B,166,124)	RS1/16S681J		R 617	(A,112,55)	RS1/16S0R0J	
R 403	(B,165,124)	RS1/16S681J		R 618	(B,148,52)	RS1/16S102J	
R 404	(B,165,127)	RS1/16S681J		R 619	(B,136,63)	RAB4C681J	
R 405	(B,165,129)	RS1/16S681J		R 621	(A,108,54)	RS1/16S104J	F

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

A	R 623	(B,107,54)	RS1/16S104J
	R 624	(A,142,67)	RS1/16S104J
	R 625	(A,112,73)	RS1/16S473J
	R 641	(A,141,93)	RS1/16S104J
	R 651	(B,146,70)	RS1/16S183J

R 927	(B,67,111)	RS1/16S473J
R 932	(B,60,118)	RS1/16S103J
R 951	(B,58,120)	RS1/16S153J
R 952	(B,58,116)	RS1/16S472J
R 953	(B,58,112)	RS1/16S472J

	R 652	(B,139,71)	RS1/16S102J
	R 653	(B,153,56)	RS1/16S222J
	R 654	(B,145,66)	RS1/16S473J
	R 701	(B,134,47)	RS1/16S221J
	R 702	(B,134,45)	RS1/16S221J

R 954	(B,55,112)	RS1/16S102J
R 962	(B,64,108)	RS1/16S153J
R 963	(B,68,108)	RS1/16S102J

CAPACITORS

B	R 703	(B,130,43)	RS1/16S221J
	R 704	(B,134,43)	RS1/16S221J
	R 705	(B,130,42)	RS1/16S221J
	R 706	(B,147,45)	RAB4C682J
	R 707	(B,148,39)	RS1/16S473J

C 103	(B,39,134)	CKSRYB104K16
C 106	(A,32,119)	CKSRYB104K16
C 181	(B,49,137)	CKSRYB473K50
C 201	(A,112,85)	CEAL470M10
C 202	(B,116,86)	CKSRYB104K16

	R 708	(B,146,39)	RS1/16S104J
	R 709	(B,125,42)	RS1/16S102J
	R 751	(A,28,55)	RD1/4PU271J
	R 801	(B,106,20)	RS1/16S222J
	R 802	(B,110,13)	RS1/16S222J

C 203	(A,118,90)	CKSRYB474K10
C 205	(A,121,85)	CEAL100M25
C 206	(B,113,89)	CKSQYB225K10
C 207	(B,109,90)	CKSQYB225K10
C 208	(B,120,91)	CKSQYB225K10

C	R 803	(B,110,15)	RS1/16S222J
	R 804	(B,128,17)	RS1/16S222J
	R 805	(B,128,19)	RS1/16S222J
	R 806	(B,128,21)	RS1/16S104J
	R 807	(B,131,18)	RS1/16S104J

C 209	(B,113,92)	CKSQYB225K10
C 210	(B,120,96)	CKSRYB104K16
C 211	(B,112,94)	CKSRYB104K16
C 212	(B,120,98)	CKSQYB225K10
C 213	(B,109,97)	CKSQYB225K10

	R 811	(A,135,19)	RS1/16S104J
	R 821	(B,62,22)	RS1/16S121J
	R 822	(B,66,22)	RS1/16S121J
	R 823	(B,70,22)	RS1/16S121J
	R 824	(B,71,14)	RS1/16S473J

C 214	(B,120,101)	CKSQYB225K10
C 215	(B,109,100)	CKSQYB225K10
C 216	(A,126,98)	CEALNP4R7M35
C 217	(A,103,90)	CEALNP4R7M35
C 218	(A,126,104)	CEALNP4R7M35

	R 825	(B,68,13)	RS1/16S1R0J
	R 831	(B,93,17)	RS1/16S331J
	R 841	(B,51,24)	RS1/16S472J
	R 842	(B,47,24)	RS1/16S102J
	R 843	(B,51,27)	RS1/16S472J

C 219	(A,103,97)	CEALNP4R7M35
C 220	(A,126,111)	CEALNP4R7M35
C 221	(A,103,103)	CEALNP4R7M35
C 222	(A,115,111)	CEAL100M25
C 223	(A,121,90)	CKSRYB104K16

D	R 851	(A,21,38)	RS1/16S331J
	R 852	(A,24,38)	RS1/16S331J
	R 853	(A,42,41)	RS1/16S1R0J
	R 854	(B,30,37)	RS1/16S391J
	R 855	(A,37,36)	RD1/4PU272J

C 241	(A,87,72)	CKSRYB103K50
C 242	(B,88,78)	CKSRYB104K16
C 243	(A,88,80)	CEAL470M10
C 254	(A,130,84)	CCSRCH470J50
C 261	(A,83,83)	CKSRYB103K50

	R 856	(A,37,39)	RD1/4PU272J
	R 857	(B,42,39)	RS1/16S101J
	R 871	(A,37,22)	RS1/16S471J
	R 872	(A,35,22)	RS1/16S471J
	R 881	(A,149,39)	RAB4C102J

C 262	(A,82,87)	CEAL100M25
C 263	(A,90,88)	CEAL220M10
C 264	(A,74,85)	CEAL101M10
C 265	(A,90,105)	CKSQYB225K10
C 266	(A,77,105)	CKSQYB225K10

E	R 885	(A,154,17)	RS1/16S103J
	R 886	(A,155,20)	RS1/16S563J
	R 891	(A,11,116)	RS1/16S101J
	R 892	(A,9,118)	RS1/16S101J
	R 893	(A,9,121)	RS1/16S101J

C 267	(A,91,102)	CKSQYB225K10
C 268	(A,77,102)	CKSQYB225K10
C 269	(A,86,103)	CKSRYB104K16
C 270	(A,81,103)	CKSRYB104K16
C 271	(B,87,96)	CCSRCH470J50

	R 894	(A,19,116)	RS1/16S1R0J
	R 901	(A,43,89)	RS1/16S221J
	R 902	(A,43,91)	RS1/16S221J
	R 903	(A,40,90)	RS1/16S223J
	R 911	(A,15,91)	RS1/16S473J

C 272	(B,80,96)	CCSRCH470J50
C 273	(B,90,93)	CCSRCH470J50
C 274	(B,77,93)	CCSRCH470J50
C 275	(B,91,100)	CKSQYB225K10
C 276	(B,76,100)	CKSQYB225K10

F	R 921	(B,67,116)	RS1/16S104J
	R 922	(B,62,124)	RS1/16S472J
	R 923	(B,65,120)	RS1/16S223J
	R 924	(B,68,117)	RS1/16S103J
	R 926	(B,62,126)	RS1/16S102J

C 277	(B,88,93)	CCSRCH470J50
C 278	(B,79,93)	CCSRCH470J50
C 301	(A,124,126)	CEAL100M25
C 302	(A,131,126)	CEAL100M25
C 303	(A,77,113)	CEAL100M25

5		6		7		8	
<u>Circuit Symbol and No.</u>		<u>Part No.</u>		<u>Circuit Symbol and No.</u>		<u>Part No.</u>	
C 304	(A,84,113)	CEAL100M25		C 653	(B,147,66)	CKSRYB104K16	A
C 305	(A,141,126)	CEAL100M25		C 701	(A,142,25)	CCSRCH101J50	
C 306	(A,148,126)	CEAL100M25		C 751	(B,39,52)	CKSRYB473K50	
C 321	(A,124,118)	CEAL220M35		C 752	(B,41,52)	CKSRYB102K50	
C 351	(A,104,116)	CKSRYB474K10		C 753	(A,40,55)	CEAT221M10	
C 352	(A,102,116)	CKSRYB474K10		C 821	(B,71,19)	CKSRYB473K50	
C 353	(A,100,116)	CKSRYB474K10		C 831	(A,91,13)	CKSRYB104K16	
C 354	(A,98,116)	CKSRYB474K10		C 841	(B,49,27)	CCSRCH101J50	
C 356	(A,114,125)	CEAL100M25		C 842	(A,54,19)	CKSRYB473K50	
C 357	(B,116,137)	CKSQYB225K10		C 851	(B,34,45)	CKSRYB104K16	
C 358	(B,120,137)	CKSQYB225K10		C 852	(A,46,46)	CEJQ470M25	B
C 359	(B,108,139)	CKSRYB104K16		C 853	(A,38,46)	CEAL101M10	
C 360	(A,81,127) 3 300 µF/16 V	CCH1486		C 854	(B,35,46)	CKSRYB104K16	
C 361	(A,104,119)	CKSQYB474K16		C 855	(B,35,30)	CCSRCH331J50	
C 362	(A,102,119)	CKSQYB474K16		C 856	(B,37,34)	CKSRYB103K50	
C 363	(A,100,119)	CKSQYB474K16		C 857	(A,45,36)	CEJQ470M25	
C 364	(A,98,119)	CKSQYB474K16		C 858	(A,44,30) 4.7 µF	CCG1111	
C 367	(A,115,118)	CEHAR330M10		C 872	(B,31,18)	CKSRYB224K10	
C 401	(A,162,115)	CKSRYB104K16		C 873	(B,33,17)	CKSRYB104K16	
C 402	(A,156,117)	CEAL101M10		C 874	(A,35,17)	CEJQ220M25	
C 403	(B,166,142)	CKSRYB103K50		C 881	(B,155,33)	CCSRCH102J50	C
C 404	(A,160,104)	CEJQ470M10		C 882	(B,152,23)	CCSRCH101J50	
C 405	(B,170,107)	CKSRYB103K50		C 883	(B,152,30)	CCSRCH101J50	
C 407	(A,160,110)	CEJQ470M10		C 884	(A,154,20)	CKSRYB103K50	
C 408	(B,166,113)	CKSRYB103K50		C 885	(A,143,19)	CKSRYB105K10	
C 409	(A,147,89)	CCSRCH101J50		C 891	(A,11,113)	CKSRYB103K50	
C 410	(B,171,110)	CCSRCH101J50		C 892	(B,14,122)	CKSRYB103K50	
C 431	(B,153,78)	CKSYB475K16		C 893	(A,14,120)	CEAL100M25	
C 432	(B,153,85)	CKSRYB103K50		C 901	(A,22,86) 470 µF/16 V	CCH1339	
C 433	(A,160,88)	CEJQ220M25		C 902	(A,34,85) 470 µF/16 V	CCH1339	
C 434	(B,166,89)	CKSRYB102K50		C 903	(A,28,92)	CKSRYB103K50	D
C 451	(A,34,74) 470 µF/16 V	CCH1339		C 904	(A,39,80)	CKSRYB104K25	
C 452	(A,25,66)	CEHAS101M10		C 905	(A,44,81)	CEAL101M10	
C 453	(B,24,70)	CKSRYB103K50		C 906	(A,34,97) 470 µF/16 V	CCH1339	
C 454	(A,24,74)	CEHAS101M10		C 911	(A,22,103) 100 µF/25 V	CCH1316	
C 461	(B,68,38)	CKSYB475K16		C 912	(A,15,93)	CKSRYB103K50	
C 462	(B,60,41)	CKSRYB103K50		C 913	(A,22,95)	CEHAS101M10	
C 463	(B,63,48)	CKSRYB103K50		C 921	(B,62,122)	CKSRYB104K25	
C 464	(A,54,53)	CEAL220M16		C 931	(B,78,139)	CKSRYB473K50	
C 482	(B,100,40)	CKSRYB102K50		C 932	(B,61,111)	CKSQYB105K16	
C 501	(B,103,43)	CKSRYB104K16		C 941	(A,89,119)	CKSRYB473K50	
C 521	(B,109,44)	CKSRYB104K16		C 951	(B,55,121)	CKSRYB104K25	
C 541	(B,116,44)	CKSRYB104K16		C 961	(B,66,108)	CKSRYB104K16	
C 551	(A,79,78)	CEAL330M6R3					
C 571	(A,98,76)	CKSRYB104K16					
C 572	(A,104,73)	CKSRYB105K10					E
C 573	(A,81,69)	CKSRYB105K10					
C 574	(A,100,70)	CCSRCH470J50					
C 575	(A,101,81)	CCSRCH470J50					
C 581	(B,91,30)	CKSQYB225K10					
C 582	(B,76,32)	CKSRYB104K16		IC 1901	(B,98,22) IC	PEG168A	
C 583	(B,84,31)	CKSRYB682K50		IC 1921	(A,149,23) IC	PD8158A	
C 584	(B,79,32)	CKSRYB331K50		IC 1931	(A,95,7) IC	GP1UX31RK	
C 585	(B,88,40)	CKSRYB103K50		IC 1951	(B,112,12) IC	S-818A33AUC-BGN	
C 602	(B,108,65)	CKSRYB103K50		Q 1861	(B,25,27) Transistor	DTC143EUA	
C 603	(A,105,65)	CEAL4R7M50		Q 1961	(B,128,21) Transistor	2SC4617	F
C 604	(B,121,71)	CCSRCH100D50		Q 1962	(A,127,17) Transistor	2SD1664	
C 605	(B,120,67)	CCSRCH100D50		D 1831	(A,40,23) LED	SML412BC5T(MN)	
C 606	(B,149,55)	CCSRCH470J50		D 1832	(A,57,6) LED	SML412BC5T(MN)	
C 651	(B,142,70)	CKSRYB105K10		D 1833	(A,57,40) LED	SML412BC5T(MN)	

B

Unit Number :

Unit Name : Keyboard Unit

MISCELLANEOUS

IC 1901	(B,98,22) IC	PEG168A	
IC 1921	(A,149,23) IC	PD8158A	
IC 1931	(A,95,7) IC	GP1UX31RK	
IC 1951	(B,112,12) IC	S-818A33AUC-BGN	
Q 1861	(B,25,27) Transistor	DTC143EUA	
Q 1961	(B,128,21) Transistor	2SC4617	F
Q 1962	(A,127,17) Transistor	2SD1664	
D 1831	(A,40,23) LED	SML412BC5T(MN)	
D 1832	(A,57,6) LED	SML412BC5T(MN)	
D 1833	(A,57,40) LED	SML412BC5T(MN)	

Circuit Symbol and No.**Part No.****Circuit Symbol and No.****Part No.**

A	D 1834	(A,23,35) LED	SML412BC5T(MN)
	D 1835	(A,9,36) LED	SML412BC5T(MN)
	D 1836	(A,9,10) LED	SML412BC5T(MN)
	D 1837	(A,35,34) LED	SML412BC5T(MN)
	D 1838	(A,79,34) LED	SML412BC5T(MN)
■	D 1839	(A,35,12) LED	SML412BC5T(MN)
	D 1840	(A,158,7) LED	SML412BC5T(MN)
	D 1841	(A,79,12) LED	SML412BC5T(MN)
	D 1842	(A,74,23) LED	SML412BC5T(MN)
	D 1861	(A,13,23) LED	SML412BC5T(MN)
B	D 1863	(A,28,23) LED	SML412BC5T(MN)
	D 1901	(B,82,20) Diode	1SS355
	L 1951	(B,118,14) Inductor	CTF1617
	L 1961	(B,132,15) Inductor	CTF1617
	TH1961	(B,116,18) Thermistor	CCX1037
■	X 1901	(B,85,20) Ceramic Resonator 16.000 MHz	CSS1616
	S 1801	(A,150,6) Push Switch	CSG1155
	S 1811	(A,57,23) Switch(MULTI-CONTROL)	CSX1065
	S 1831	(A,24,40) Push Switch	CSG1155
	S 1832	(A,8,40) Push Switch	CSG1155
C	S 1833	(A,8,6) Push Switch	CSG1155
	S 1834	(A,35,37) Push Switch	CSG1155
	S 1835	(A,31,23) Push Switch	CSG1155
	S 1836	(A,35,9) Push Switch	CSG1155
	S 1837	(A,78,37) Push Switch	CSG1155
	S 1838	(A,161,7) Push Switch	CSG1155
	S 1839	(A,78,9) Push Switch	CSG1155
	VR1961	(B,128,14) Semi-fixed 10 kΩ(B)	CCP1229

RESISTORS

D	R 1801	(B,101,37)	RS1/16S222J
	R 1802	(B,101,39)	RS1/16S222J
	R 1803	(B,159,16)	RS1/16S333J
	R 1811	(B,63,30)	RS1/16S103J
	R 1812	(B,59,23)	RS1/16S333J
■	R 1813	(B,59,26)	RS1/16S103J
	R 1814	(B,65,30)	RS1/16S102J
	R 1815	(B,60,26)	RS1/16S332J
	R 1816	(B,50,35)	RS1/16S102J
	R 1818	(B,53,12)	RS1/16S103J
E	R 1819	(B,60,23)	RS1/16S222J
	R 1831	(B,56,7)	RS1/16S561J
	R 1834	(B,36,14)	RS1/16S561J
	R 1836	(B,58,7)	RS1/16S561J
	R 1838	(B,35,34)	RS1/16S561J
■	R 1841	(B,11,30)	RS1/16S122J
	R 1843	(B,76,28)	RS1/16S561J
	R 1861	(B,17,31)	RS1/16S181J
	R 1865	(B,20,29)	RS1/16S681J
	R 1868	(B,22,29)	RS1/16S681J
F	R 1901	(B,84,34)	RS1/16S103J
	R 1902	(B,79,25)	RS1/16S473J
	R 1903	(B,80,20)	RS1/16S154J
	R 1904	(B,85,28)	RAB4C102J
	R 1905	(B,73,7)	RS1/16S104J
	R 1906	(B,94,35)	RAB4C473J
	R 1907	(B,73,18)	RAB4C102J
	R 1908	(B,53,10)	RS1/16S221J
	R 1909	(B,97,35)	RAB4C473J

R 1910	(B,101,6)	RAB4C101J
R 1911	(B,104,9)	RAB4C101J
R 1912	(B,142,15)	RAB4C101J
R 1913	(B,146,28)	RS1/16S101J
R 1914	(B,159,26)	RS1/16S101J
R 1915	(B,159,29)	RAB4C101J
R 1916	(A,116,8)	RAB4C101J
R 1917	(A,106,19)	RAB4C101J
R 1918	(A,106,23)	RAB4C101J
R 1919	(B,145,24)	RAB4C101J
R 1920	(B,104,34)	RAB4C101J
R 1931	(B,81,12)	RS1/16S101J
R 1932	(B,89,5)	RS1/16S103J
R 1933	(B,82,12)	RS1/16S2R2J
R 1951	(B,117,11)	RS1/16S222J
R 1961	(B,117,21)	RS1/16S333J
R 1962	(B,129,20)	RS1/16S183J
R 1963	(B,118,19)	RS1/16S563J
R 1964	(B,120,21)	RS1/16S392J
R 1965	(A,117,20)	RAB4C101J
R 1966	(A,130,21)	RS1/16S152J

CAPACITORS

C 1831	(A,39,23)	CKSRYF104Z50
C 1832	(A,54,6)	CKSRYF104Z50
C 1833	(A,60,40)	CKSRYF104Z50
C 1834	(A,23,36)	CKSRYF104Z50
C 1835	(A,8,34)	CKSRYF104Z50
C 1836	(A,8,11)	CKSRYF104Z50
C 1837	(A,36,32)	CKSRYF104Z50
C 1838	(A,79,33)	CKSRYF104Z50
C 1839	(A,37,15)	CKSRYF104Z50
C 1840	(A,156,7)	CKSRYF104Z50
C 1841	(A,79,13)	CKSRYF104Z50
C 1842	(A,75,26)	CKSRYF104Z50
C 1861	(A,13,20)	CKSRYF104Z50
C 1862	(B,28,27)	CKSRYF104Z50
C 1864	(A,26,24)	CKSRYF104Z50
C 1901	(B,81,25)	CKSRYB103K50
C 1902	(B,79,17)	CKSRYB104K25
C 1903	(B,109,21)	CKSRYB103K50
C 1921	(B,150,28)	CKSRYB103K50
C 1931	(B,81,8)	CSZSR100M16
C 1951	(B,111,16)	CSZSR4R7M16
C 1952	(B,122,12)	CSZSR4R7M10
C 1953	(B,114,17)	CKSRYB103K50
C 1954	(B,122,18)	CSZSR4R7M10
C 1963	(A,117,23)	CKSRYB104K25
C 1964	(A,123,21)	CKSRYB104K25
C 1965	(A,128,21)	CKSRYB104K25
C 1966	(A,127,22)	CKSRYB104K25

D**Unit Number : CWS1389****Unit Name : Switch Unit**

S 1	Switch(CLOSE)	CSN1051
S 2	Switch(OPEN)	CSN1052

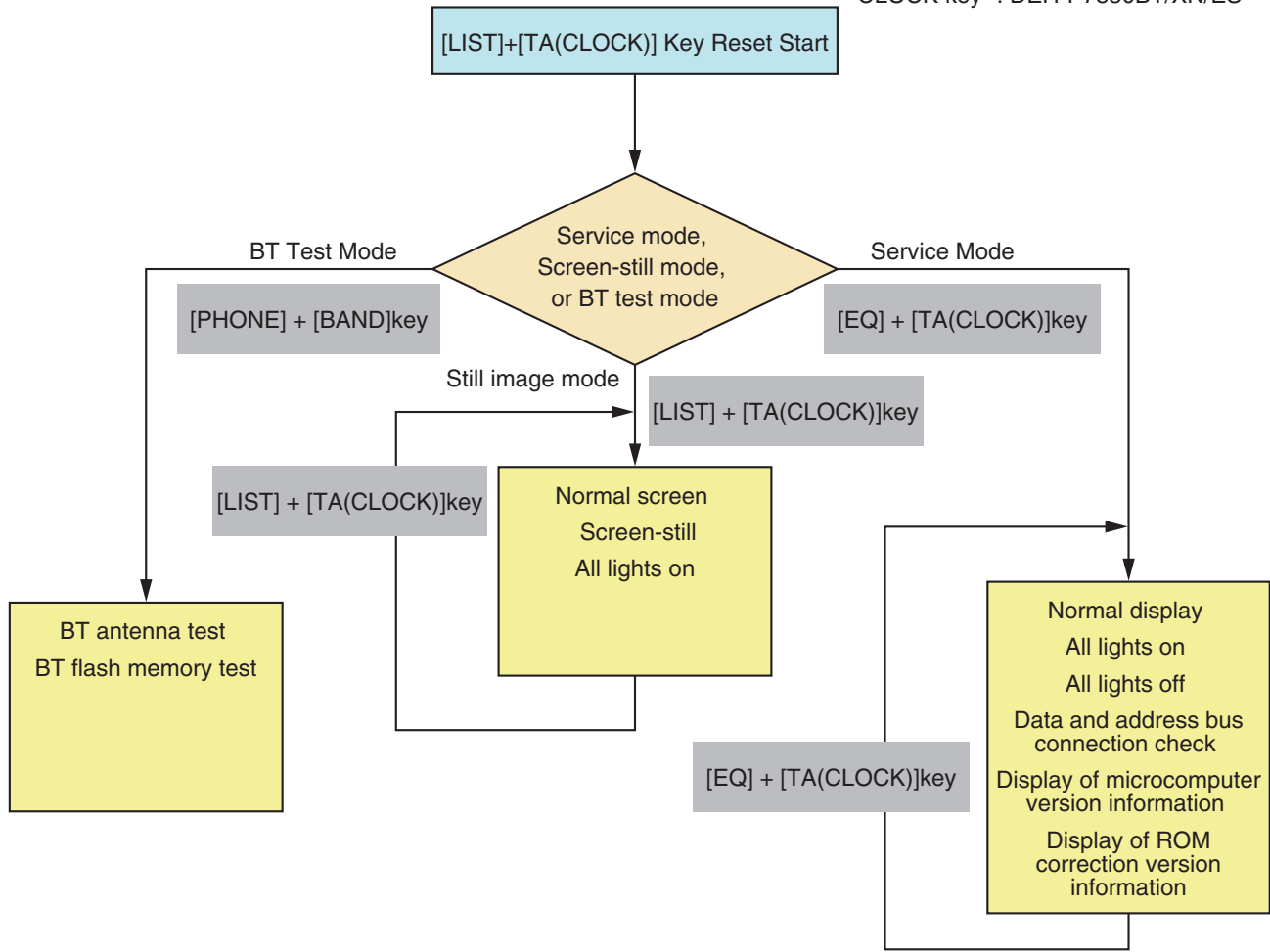
Circuit Symbol and No.		Part No.	Circuit Symbol and No.		Part No.
C Unit Number : CWX3410 Unit Name : CD Core Unit(S10.5COMP1)			R 740	(A,38,59)	RS1/16SS222J
			R 746	(A,13,38)	RS1/16SS104J
			R 750	(A,40,66)	RS1/16SS473J
			R 902	(A,20,36)	RS1/16SS221J
			R 905	(A,21,36)	RS1/16SS221J
			R 906	(B,20,36)	RS1/16SS221J
			R 907	(B,16,62)	RS1/16SS0R0J
			R 908	(B,16,64)	RS1/16SS0R0J
			R 911	(B,20,32)	RS1/16SS0R0J
MISCELLANEOUS			CAPACITORS		
IC 201	(B,39,70) IC	UPD63763CGJ	C 103	(B,57,83)	CEVW101M16
IC 203	(A,12,16) IC	NJM2886DL3-33	C 108	(A,47,66)	CKSSYB104K10
IC 301	(A,28,18) IC	BA5835FP	C 201	(B,46,56)	CKSSYB102K50
IC 701	(A,32,48) IC	PE5565A	C 202	(B,47,58)	CKSSYB104K10
Q 101	(B,60,89) Transistor	2SA1577	C 204	(B,35,48)	CEVW220M6R3
Q 701	(B,24,41) Transistor	UN2111	C 205	(A,34,63)	CKSSYB104K10
X 201	(B,28,57) Ceramic Resonator 16.934 MHz	CSS1603	C 208	(B,34,54)	CKSSYB104K10
X 701	(A,24,37) Ceramic Resonator 4.000 MHz	CSS1652	C 209	(B,31,57)	CKSSYB104K10
S 901	(A,57,57) Switch(HOME)	CSN1067	C 210	(A,31,66)	CKSRYB105K10
S 903	(B,23,78) Switch(DSCSNS)	CSN1067	C 216	(B,53,77)	CKSSYB332K50
S 904	(B,42,87) Switch(12EJ)	CSN1068	C 217	(B,52,79)	CKSSYB104K10
S 905	(B,28,88) Switch(8EJ)	CSN1068	C 218	(B,52,76)	CKSSYB473K10
RESISTORS			C 219	(B,52,74)	CKSSYB104K10
R 101	(B,61,92)	RS1/10SR2R4J	C 220	(A,46,77)	CKSSYB182K50
R 102	(B,63,92)	RS1/10SR2R4J	C 221	(B,51,74)	CKSSYB104K10
R 103	(B,63,89)	RS1/10SR2R7J	C 222	(A,46,73)	CCSSCH560J50
R 104	(A,52,73)	RS1/16SS102J	C 223	(A,44,74)	CCSSCH4R0C50
R 201	(B,44,57)	RS1/16SS102J	C 224	(B,52,68)	CKSSYB104K10
R 202	(A,38,62)	RS1/16SS473J	C 225	(A,47,67)	CKSSYB103K16
R 203	(A,37,62)	RS1/16SS473J	C 226	(A,49,67)	CCSSCH680J50
R 214	(A,46,79)	RS1/16SS472J	C 227	(A,48,65)	CCSSCH470J50
R 216	(A,46,81)	RS1/16SS472J	C 228	(A,46,62)	CKSSYB103K16
R 221	(A,44,81)	RS1/16SS103J	C 232	(A,12,31)	CKSRYB105K10
R 222	(A,45,81)	RS1/16SS103J	C 237	(A,31,67)	CKSSYB104K10
R 225	(B,52,78)	RS1/16SS103J	C 239	(A,46,74)	CCSSCH220J50
R 226	(B,52,77)	RS1/16SS393J	C 246	(A,42,80)	CKSSYB104K10
R 227	(A,44,75)	RS1/16SS562J	C 250	(A,42,81)	CKSRYB102K50
R 228	(A,46,72)	RS1/16SS122J	C 251	(A,41,83)	CKSRYB102K50
R 229	(A,44,72)	RS1/16SS472J	C 303	(A,18,20)	CKSSYB472K25
R 232	(A,46,75)	RS1/16SS122J	C 304	(A,17,17)	CKSSYB223K16
R 241	(B,26,63)	RS1/16SS333J	C 307	(A,34,15)	CKSSYB104K10
R 243	(B,26,62)	RS1/16SS333J	C 308	(A,17,30)	CKSRYB105K10
R 245	(B,26,69)	RS1/16SS333J	C 601	(B,25,50)	CCSRCH102J50
R 248	(B,55,74)	RS1/16SS105J	C 602	(B,26,51)	CCSRCH102J50
R 307	(A,19,20)	RS1/16SS183J	C 701	(B,25,47)	CKSSYB104K10
R 308	(A,17,20)	RS1/16SS183J	C 703	(B,28,42)	CKSSYB103K16
R 309	(A,18,18)	RS1/16SS183J	C 706	(B,34,43)	CKSSYB104K10
R 310	(A,17,16)	RS1/16SS183J	C 707	(A,36,57)	CKSSYB104K10
R 601	(B,30,47)	RS1/16S101J	C 714	(A,24,41)	CKSSYB104K10
R 602	(B,28,50)	RS1/16S101J	C 722	(B,29,45)	CKSQYB475K6R3
R 606	(B,20,54)	RS1/16S0R0J	C 903	(B,14,54)	CKSSYB471K50
R 701	(B,26,44)	RS1/16SS221J	C 907	(B,14,62)	CKSSYB103K16
R 707	(B,32,45)	RS1/16SS473J	Miscellaneous Parts List		
R 709	(A,36,35)	RS1/16SS222J	M 1	Pickup Unit(P10.5)(Service)	CXX1942
R 710	(B,41,46)	RS1/16SS102J	M 2	Motor Unit(SPINDLE)	CXC7134
R 712	(A,45,57)	RS1/16SS222J	M 881	Motor Unit(LOADING/CARRIAGE)	CXC4026
R 713	(B,40,57)	RS1/16SS222J		Motor Unit(FLAP)	XXA7400
R 716	(B,29,37)	RS1/16SS472J			
R 724	(B,31,36)	RS1/16S473J			
R 726	(B,23,47)	RS1/16SS103J			
R 727	(B,31,42)	RS1/16SS473J			
R 729	(B,20,48)	RS1/16SS223J			
R 730	(B,20,46)	RS1/16SS473J			

6. ADJUSTMENT

6.1 DISPLAY TEST MODE

● Display Test Mode

TA key : DEH-P75BT/XN/EW5
CLOCK key : DEH-P7850BT/XN/ES



1) Cautions on adjustments

• In this product the single voltage (3.3V) is used for the regulator. The reference voltage is the REFO1 (1.65V) instead of the GND.

If you should mistakenly short the REFO1 with the GND during adjustment, accurate voltage will not be obtained, and the servo's misoperation will apply excessive shock to the pickup. To avoid such problems:

a. Do not mix up the REFO1 with the GND when connecting the (-) probe of measuring instruments. Especially on an oscilloscope, avoid connecting the (-) probe for CH1 to the GND.

b. In many cases, measuring instruments have the same potential as that for the (-) probe. Be sure to set the measuring instruments to the floating state.

c. If you have mistakenly connected the REFO1 to the GND, turn off the regulator or the power immediately.

• Before mounting and removing filters or leads for adjustment, be sure to turn off the regulator.

• For stable circuit operation, keep the mechanism operating for about one minute or more after the regulator is turned on.

• In the test mode, any software protections will not work. Avoid applying any mechanical or electrical shock to the mechanism during adjustment.

• The RFI and RFO signals with a wide frequency range are easy to oscillate. When observing the signals, insert a resistor of 1k ohms in series.

• The load and eject operation is not guaranteed with the mechanism upside down. If the mechanism is blocked due to mistaken eject operation, reset the product or turn off and on the ACC to restore it.

2) Test mode

This mode is used to adjust the CD mechanism module.

• To enter the test mode.

While pressing the EQ and TA(CLOCK) keys at the same time, reset.

• To exit from the test mode.

Turn off the ACC and back up.

Notes:

a. During ejection, do not press any other keys than the EJECT key until the loaded disc is ejected.

b. If you have pressed the (→) key or (←) key during focus search, turn off the power immediately to protect the actuator from damage caused by the lens stuck.

c. For the TR jump modes except 100TR, the track jump operation will continue even if the key is released.

d. For the CRG move and 100TR jump modes, the tracking loop will be closed at the same time when the key is released.

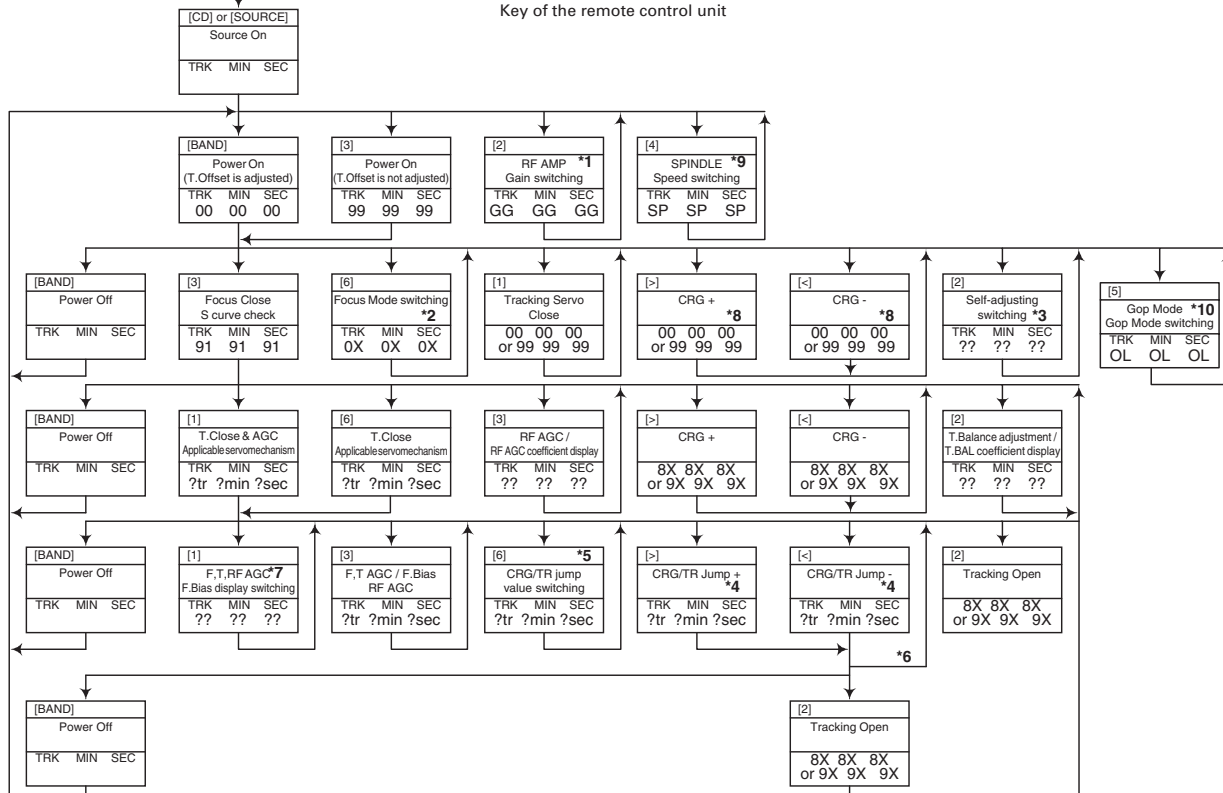
e. When the power is turned off and on, the jump mode is reset to the single TR (91), the RF amp gain is set to 0dB, and the auto-adjustment values are reset to the default settings.

Flow Chart

[Key]	[EQ] + [TA(CLOCK)] + Reset or [EQ] + [TA(CLOCK)] + BU + ACC Test Mode In
Contents	
Display	

Key of the head unit

Key of the remote control unit



*1) TYP → + 6 dB → + 12 dB
TRK MIN SEC → TRK₀₆MIN₀₆SEC₀₆ → TRK₁₂MIN₁₂SEC₁₂

*2) Focus Close → S Curve check setting → F EQ measurement setting
TRK₀₀MIN₀₀SEC₀₀ → TRK₀₁MIN₀₁SEC₀₁ → TRK₀₂MIN₀₂SEC₀₂
(TRK₉₉MIN₉₉SEC₉₉)

*3) F.Offset Display → RF.Offset → T.Offset Display → Switch to the order of the original display

*4) 1TR/4TR/10TR/32TR/100TR

*5) Single → 4TR → 10TR → 32TR → 100TR → CRG Move
9x(8x):91(81) 92(82) 93(83) 94(84) 95(85) 96(86)

*6) Only at the time of CRG move, 100TR jump

*7) TRK/MIN/SEC → F.AGC → T.AGC Gain → F.Bias → RF AGC

*8) CRG motor voltage = 2 [V]

*9) TYP (1X) → 2X → 1X
TRK MIN SEC → TRK₂₂MIN₂₂SEC₂₂ → TRK₁₁MIN₁₁SEC₁₁

*10) OFF(TYP) → FORCUS → TRACKING
TRK MIN SEC → TRK₇₀MIN₇₀SEC₇₀ → TRK₇₁MIN₇₁SEC₇₁

• As for the double speed (2x), audio output cannot be supported

*1) • After the [Eject] key is pressed keys other than the [Eject] key should not be pressed, until disc ejection is complete.

• When the key [2] or [3] is pressed during the Focus Search, the power supply should be immediately turned off (otherwise the lens sticks to Wall, causing the actuator to be damaged).

• In the case of TR jump other than to 100TR, the function shall continue to be processed even if the TR jump key is released. As for the CRG Move and 100TR Jump, the mechanism shall be set to the Tracking Close mode when the key is released.

• When the power is turned on/off the jump mode is reset to the Single TR (91) while the gain of the RFAMP is reset to 0 dB. At the same time all the self-adjusting values shall return to the default setting.

[Key]	Operation Test Mode
[BAND]	Power On/Off
[>]	CRG + / TR Jump + (Direction of the external surface)
[<]	CRG - / TR Jump - (Direction of the internal surface)
[1]	T. CLS & AGC & Applicable servomechanism / AGC,AGC display setting
[2]	RF Gain switching / Offset adjustment display / T.Balance adjustment / T. Open
[3]	F. Close,S Curve / Rough Servo and RF AGC / F,T,RF AGC
[4]	SPDL 1X/2X switching As for the double speed(2x), audio output <u>cannot</u> be supported.
[5]	Error Rate measurement ON : ERR 30Counts Start BER display data[%]
[6]	F. Mode switching / Tracking Close / CRG•TR Jump Switching



6.3 CHECKING THE GRATING AFTER CHANGING THE PICKUP UNIT

- **Note :**

The grating angle of the PU unit cannot be adjusted after the PU unit is changed. The PU unit in the CD mechanism module is adjusted on the production line to match the CD mechanism module and is thus the best adjusted PU unit for the CD mechanism module. Changing the PU unit is thus best considered as a last resort. However, if the PU unit must be changed, the grating should be checked using the procedure below.

- **Purpose :**

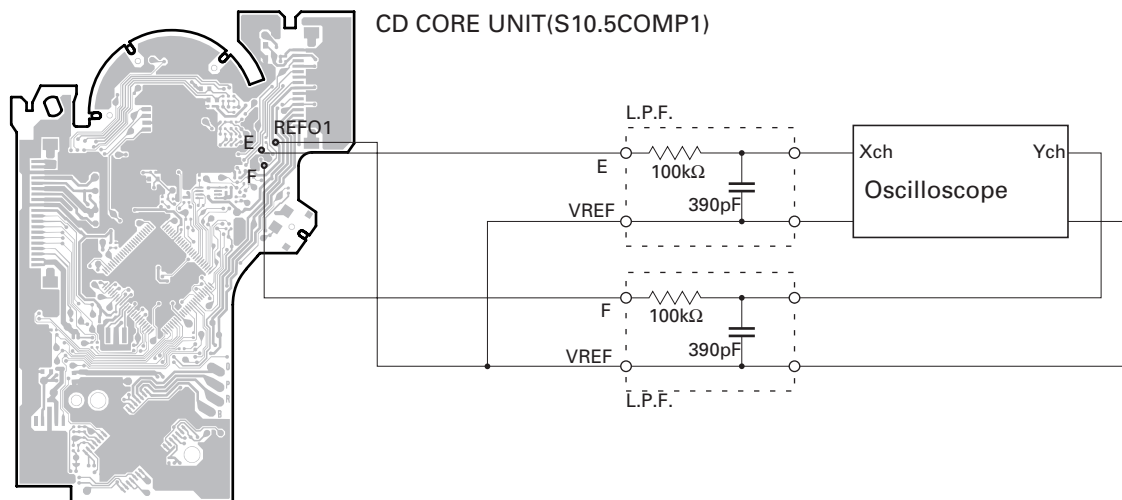
To check that the grating is within an acceptable range when the PU unit is changed.

- **Symptoms of Mal-adjustment :**

If the grating is off by a large amount symptoms such as being unable to close tracking, being unable to perform track search operations, or taking a long time for track searching.

- **Method :**

- Measuring Equipment
- Measuring Points
- Disc
- Mode
- Oscilloscope, Two L.P.F.
- E, F, REFO1
- TCD-782
- TEST MODE



- **Checking Procedure**

1. In test mode, load the disc and switch the 3V regulator on.
2. Using the \rightarrow and \leftarrow buttons, move the PU unit to the innermost track.
3. Press key 3 to close focus, the display should read "91". Press key 2 to implement the tracking balance adjustment the display should now read "81". Press key 3. The display will change, returning to "81" on the fourth press.
4. As shown in the diagram above, monitor the LPF outputs using the oscilloscope and check that the phase difference is within 75° . Refer to the photographs supplied to determine the phase angle.
5. If the phase difference is determined to be greater than 75° try changing the PU unit to see if there is any improvement. If, after trying this a number of times, the grating angle does not become less than 75° then the mechanism should be judged to be at fault.

- **Note**

Because of eccentricity in the disc and a slight misalignment of the clamping center the grating waveform may be seen to "wobble" (the phase difference changes as the disc rotates). The angle specified above indicates the average angle.

- Hint

Reloading the disc changes the clamp position and may decrease the "wobble".

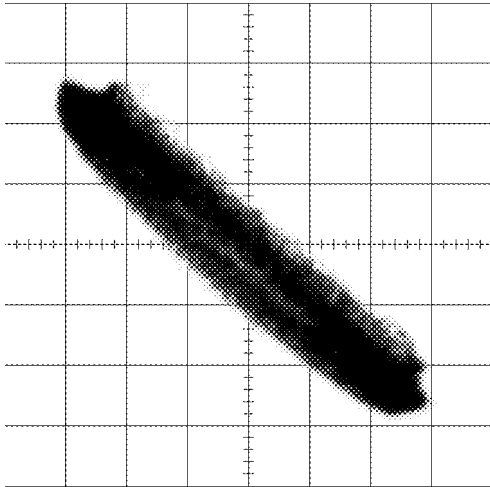
Grating waveform

Ech → Xch 20 mV/div, AC

Fch → Ych 20 mV/div, AC

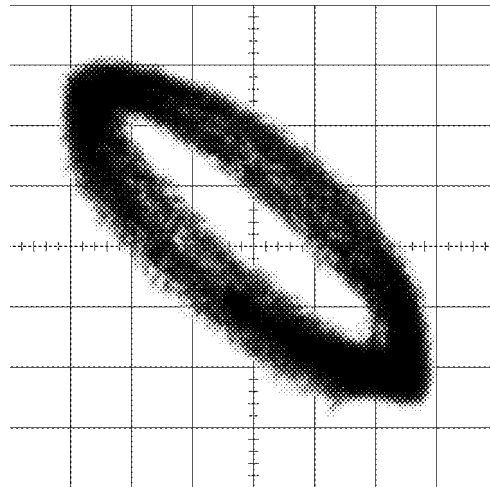
A

0°



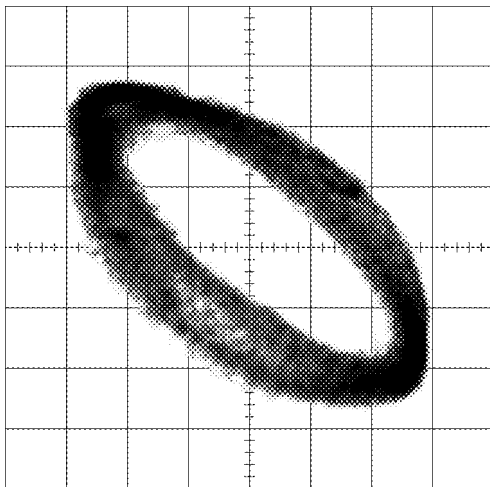
B

30°



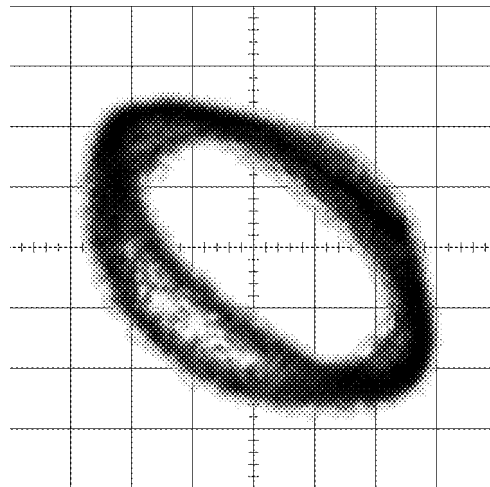
C

45°



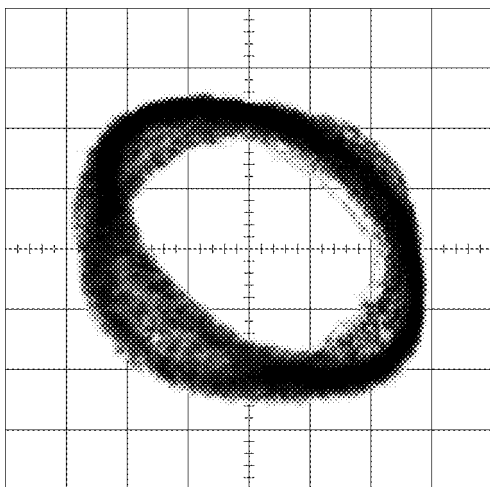
D

60°



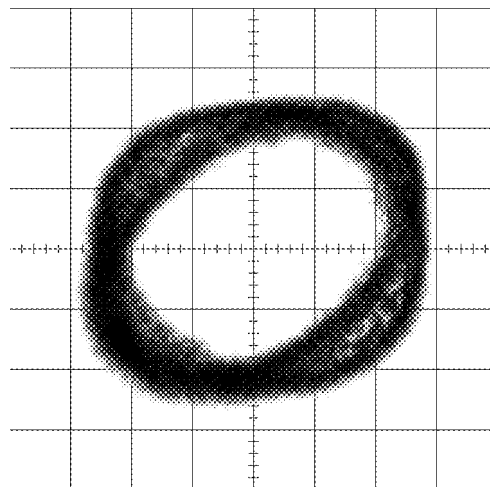
E

75°



F

90°



6.4 ERROR MODE

● Error Messages

If a CD is not operative or stopped during operation due to an error, the error mode is turned on and cause(s) of the error is indicated with a corresponding number. This arrangement is intended at reducing nonsense calls from the users and also for facilitating trouble analysis and repair work in servicing.

(1) Basic Indication Method

1) When SERRORM is selected for the CSMOD (CD mode area for the system), error codes are written to DMIN (minutes display area) and DSEC (seconds display area). The same data is written to DMIN and DSEC. DTNO remains in blank as before.

2) Head unit display examples

Depending on display capability of LCD used, display will vary as shown below. xx contains the error number.

8-digit display	6-digit display	4-digit display
ERROR-xx	ERR-xx	E-xx

(2) Error Code List

Code	Class	Displayed error code	Description of the code and potential cause(s)
10	Electricity	Carriage Home NG SERVO LSI Com- munication Error	CRG can't be moved to inner diameter. CRG can't be moved from inner diameter. → Failure on home switch or CRG move mechanism. Communication error between microcomputer and SERVO LSI.
11	Electricity	Focus Servo NG	Focusing not available. → Stains on rear side of disc or excessive vibrations on REWRITABLE.
12	Electricity	Spindle Lock NG Subcode NG	Spindle not locked. Sub-code is strange (not readable). → Failure on spindle, stains or damages on disc, or excessive vibrations. A disc not containing CD-R data is found. Turned over disc are found, though rarely. CD signal error.
17	Electricity	Setup NG	AGC protection doesn't work. Focus can be easily lost. → Damages or stains on disc, or excessive vibrations on REWRITABLE.
30	Electricity	Search Time Out	Failed to reach target address. → CRG tracking error or damages on disc.
44	Electricity	ALL Skip	Skip setting for all track. (CD-R/RW)
50	Mechanism	CD On Mech Error	Mechanical error during CD ON. → Defective loading motor, mechanical lock and mechanical sensor.
A0	System	Power Supply NG	Power (VD) is ground faulted. → Failure on SW transistor or power supply (failure on connector).

Remarks: Mechanical errors are not displayed (because a CD is turned off in these errors).

Unreadable TOC does not constitute an error. An intended operation continues in this case.

Upper digits of an error code are subdivided as shown below:

1x: Setup relevant errors, 3x: Search relevant errors, Ax: Other errors.

6.5 BLUETOOTH TEST MODE

● About Memory Clear

When resetting the microprocessor, the memory is initialized except for the following four items. This enables user to avoid the task of registering phones and transferring phone directory again even after resetting system at the time of battery exchange, etc.

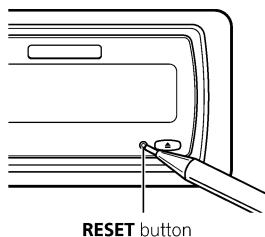
- Registration of phone
- Phone directory
- History of sending/arrival
- Dial preset

Resetting the microprocessor

The microprocessor must be reset under the following conditions:

- Prior to using this unit for the first time after installation
- If the unit fails to operate properly
- When strange or incorrect messages appear on the display

- Press **RESET** with a pen tip or other pointed instrument.



Clearing all memory

To protect personal and private information, data about the phone stored in this unit can be deleted.

1 Press SOURCE and hold until the unit turns off.

2 Press MULTI-CONTROL and hold until Language select appears in the display.

3 Turn MULTI-CONTROL to select Phone reset.
Phone reset appears in the display.

4 Push MULTI-CONTROL right to show a confirmation display.

Clear memory YES is displayed. Clearing memory is now on standby.

- If you do not want to reset phone memory, press **BAND**.

5 Press MULTI-CONTROL to clear the memory.

All data in the telephone source, including Phone Book entries, number presets and the Call History is cleared. ■

● Function Specifications for Bluetooth Test Mode (when using BT-compliant mobile phone)

Specifications for BT Built-in mobile phone

The mobile phone compliant to Bluetooth Ver 1.1 requires at least *HFP and *OPP to be mounted.

The model having validly accomplished connecting verification is desirable.

The model capable of being in standby state is desirable.

*HFP : **H**ands-Free **P**rofile, OPP : **O**bject **P**ush **P**rofile

1. Cautions

[Important]

* When conducting this Test Mode, writing into memory and others will be checked. Because of that, the data stored by the user will be deleted. Please obtain approval from the user beforehand.

* On this product, the user's memory for telephone directory information will not be cleared even if BU power is turned off. If you register the telephone information to the unit in normal mode for checking the Bluetooth function, you have to delete the data which you registered before returning the unit to the user.

* Note that if the user is already using all of user's memory(No.1 - 3 and Guest 1,2), you need to delete user's data in order to check the Bluetooth function in normal mode.

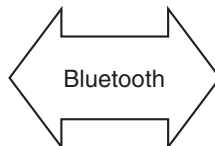
2. Outline of Functions

The following 3 items are to be confirmed for the simple BT action check by using BT-compliant mobile phone:

- Confirmation of Bluetooth connection (certification connection and voice connection)
- Confirmation of BT antenna sensitivity (connection)
- Confirmation of FLASH memory action

3. Configuration Diagram

DEH-P75BT/XN/EW5, DEH-P7850BT/XN/ES

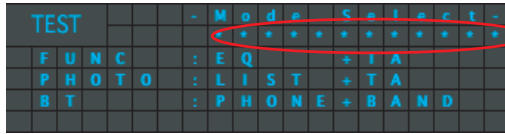


A

Specifications for Operation

Operation Method

RESET start while pressing TA (CLOCK) + LIST.



DEH device name is displayed.

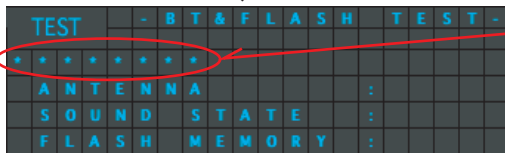
*In case the test is conducted as destined for ES, TA → CLOCK will be displayed.

↓ Phone + BAND key



Standby for connection from the device (mobile phone, etc.)
Connection from DEH to the device cannot be made.

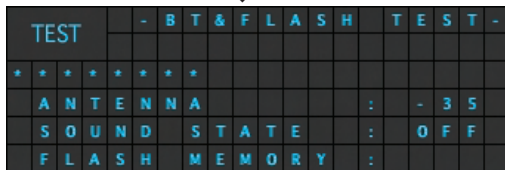
↓ Device connection completed



Device name is displayed.

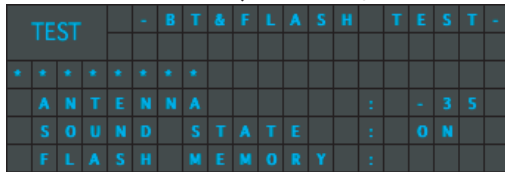
When the connection is completed, the name of the connected device will be displayed. (MAX 12 one-byte characters)
ANTENNA is checked automatically.

↓ ANTENNA check complete (automatic)



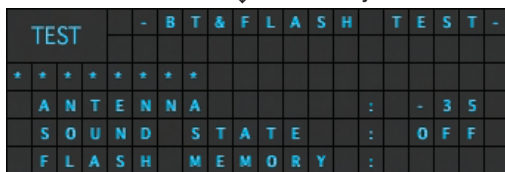
The result of ANTENNA check is displayed. The value is only a guideline. The ANTENNA level displayed is -80 to -18.
If an ANTENNA value outside of the range is displayed after connection, check the condition of the unit and try from the beginning again.

↓ Center key

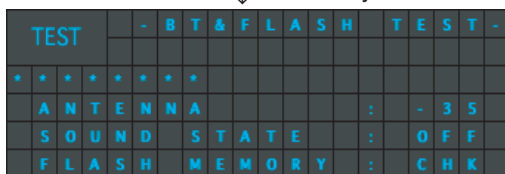


SKIP the following two items by pressing the Center key as they are the ones checked at the time of manufacturing.

↓ Center key

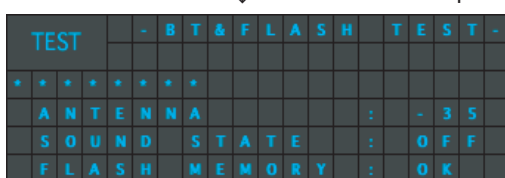


↓ Center key



Start FLASH check.

↓ FLASH check complete



FLASH check is conducted automatically according to the following steps.

Delete → Write → Read → Totally delete → Read
Read out the written data, and verify that both of them match.
Read out after total delete, and verify that the deletion has been accomplished. Verification is OK if OK is displayed.
Test is complete if everything progressed normally up to this point.

F

● Function Specifications for Bluetooth Test Mode (when using 2.4 GHz-compliant spectrum analyzer)

1. Cautions

* When the service site has a 2.4 GHz-compliant spectrum analyzer, the peripheral facilities shown below are also required.

Also, the antenna terminal on BT unit must be directly connected to the cable.

A white coaxial cable connected to the antenna connector on BT unit is removed by taking out the upper case and CD mechanics of the product.

This task would be safer if a special connector-drawing jig is available.

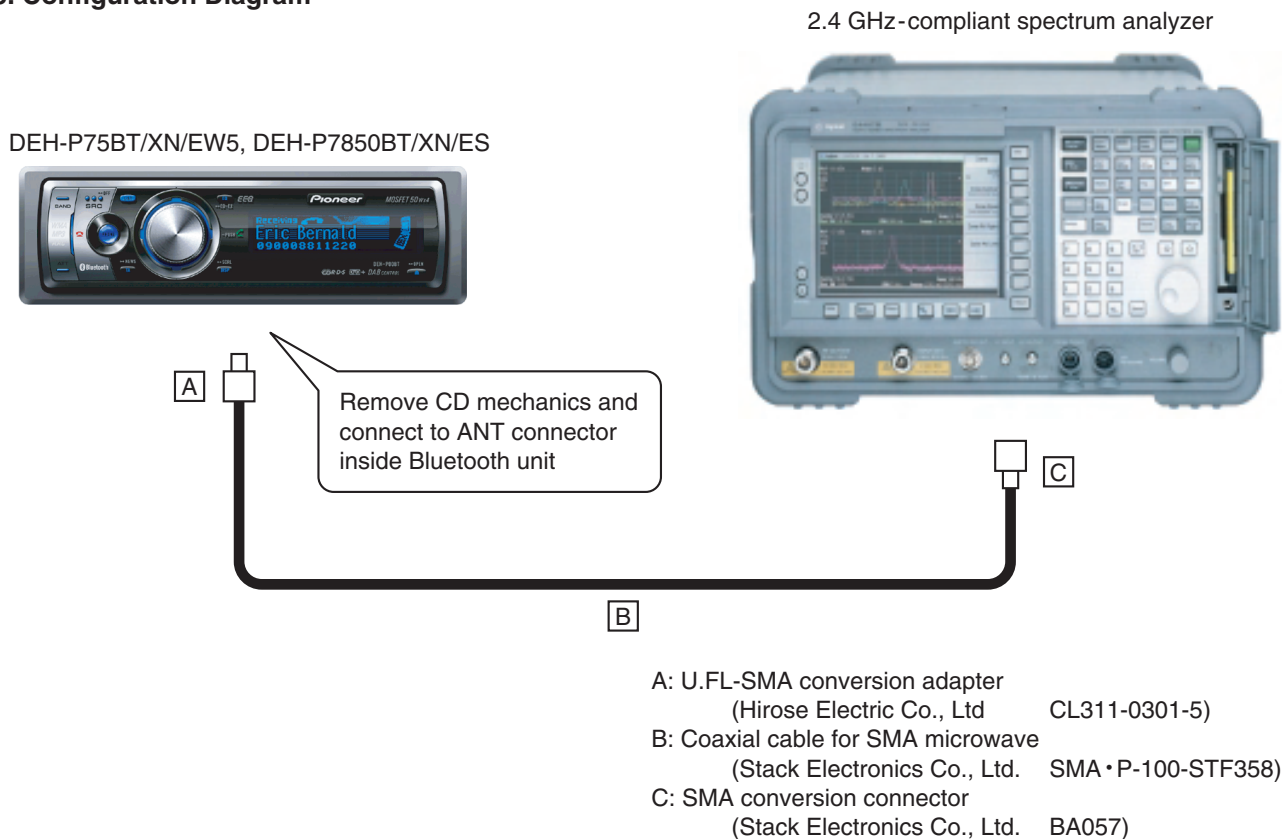
Next, the U.FL connector from spectrum analyzer is connected. The styling of cable must be taken good care so as not to add further burden on BT antenna connector and to break it.

2. Outline of Functions

The following confirmation is to be conducted by test mode in order to simply check BT actions using 2.4 GHz-compliant spectrum analyzer.

* Confirmation of output level of Bluetooth unit

3. Configuration Diagram



4. How to Start-up the Test Mode

Specifications for Operation

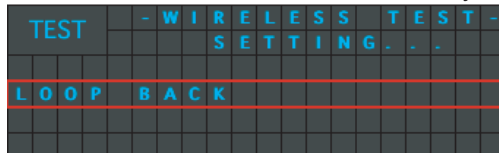
Operation Method

Reset while pressing EQ+TA (CLOCK).
(Enter into "all sources test mode").



[Normal demo screen]

↓ Press Phone key.



→ Set to "LOCAL TX NM" by pressing the left/right key.

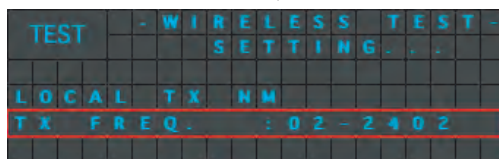
[Setting screen]

↓ Press the left/right key.



[Local TX NM setting]

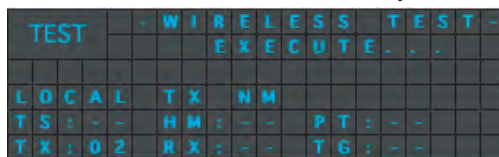
↓ Press the Center key.



→ Select the frequency by pressing the up/down key.
02-2402 (Initial value) ↔ 41-2441 ↔ 80-2480 ↔ 95-2495
Measurement shall be taken at 02, 41 and 80.

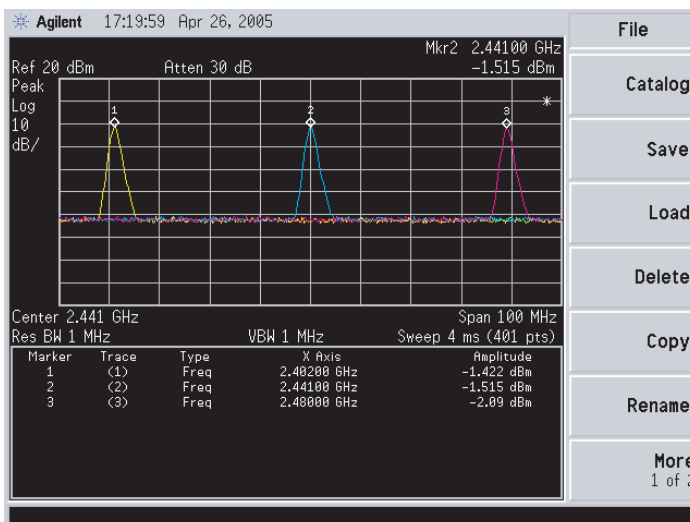
[Local TX NM detail setting]

↓ Center key



→ Return to the Local TX NM setting screen by pressing the BAND key.

[When executing Local TX NM]



As per above, measure output level of each frequency with spectrum analyzer upon connection.
A standard of judgment should be within the following range of output level V.
"-6 dBm < V < 4 dBm"

6.6 SYSTEM MICROCOMPUTER TEST PROGRAM



● PCL Output

In the normal operation mode (with the detachable panel installed, the ACC switched ON, the standby mode cancelled), shift the STEST IC601(Pin 86) terminal to H.

The clock signal is output from the PCL1 terminal IC601(Pin 41).

The frequency of the clock signal is 625.000 kHz that is one 32th of the fundamental frequency.

The clock signal should be 625.000 kHz(- 25 Hz, + 25 Hz).

If the clock signal is out of the range, the X'tal (X601) should be replaced with new one.

7. GENERAL INFORMATION

7.1 DIAGNOSIS

7.1.1 DISASSEMBLY

● Removing the Case (not shown)

1. Remove the Case.

● Removing the CD Mechanism Module (Fig.1)

1 Remove the four screws.

Disconnect the connector and then remove the CD Mechanism Module.

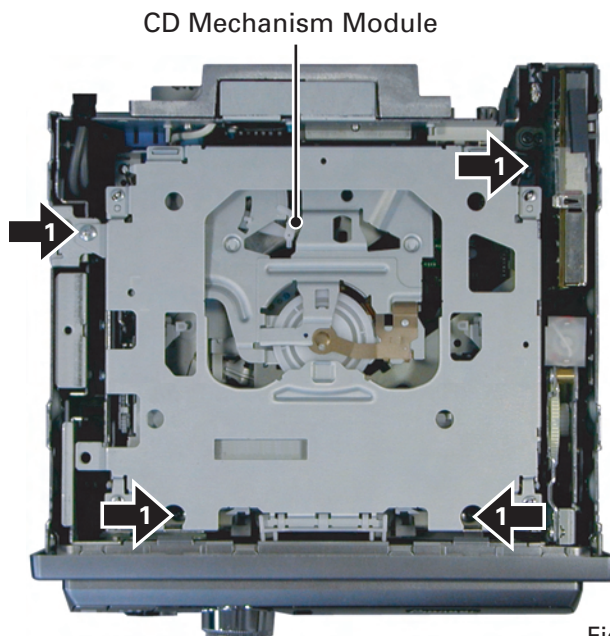


Fig.1

● Removing the Cord Assy (Fig.2)

1 Disconnect the Cord Assy by Jig GGF1539.

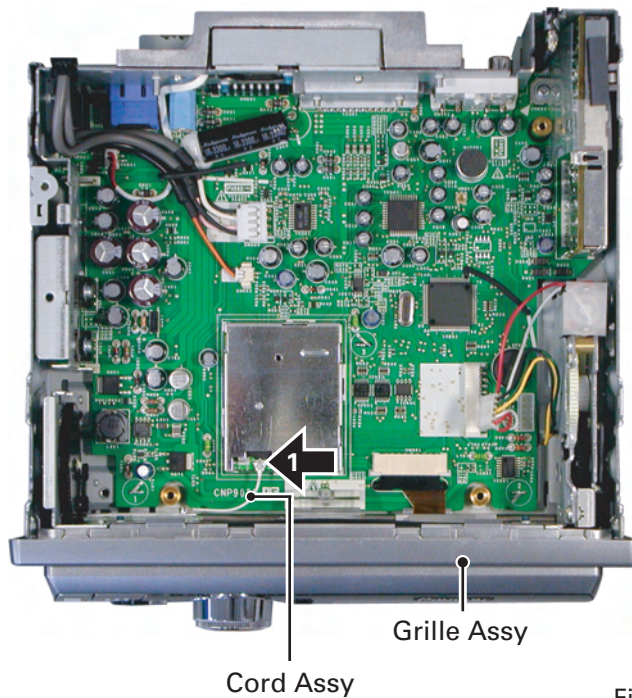


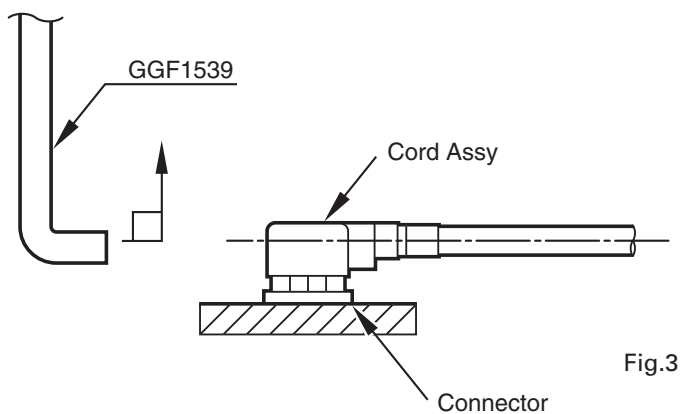
Fig.2

When unplugging the cord assy, make sure to use jig GGF1539.

If the antenna cable is directly unplugged without using jig GGF1539, you might damage your fingertip or fingernail.

● How to Remove the Cord Assy

When unplugging cord assy, hook the point of jig GGF1539 on the lid of cord assy and vertically draw out along with the engagement axis of connector.



● How to Attach the Cord Assy

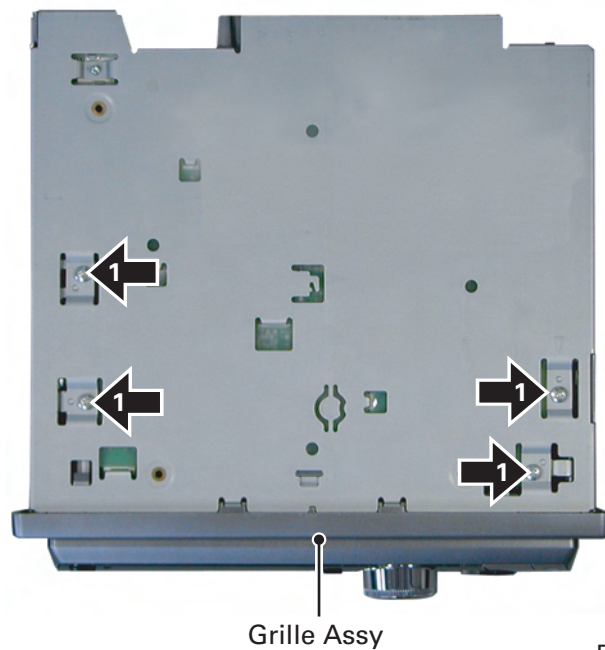
For inserting cord assy, adjust cord assy with the engagement axis of connector and insert it as vertically as possible.

Do not insert the cord assy in extreme slant, as the connector might suffer damage.

● Removing the Grille Assy (Fig.4)

1 Remove the four screws.

Disconnect the connector and then remove the Grille Assy.



● Removing the Tuner Amp Unit (Fig.5)

A

1

Remove the three screws.

2

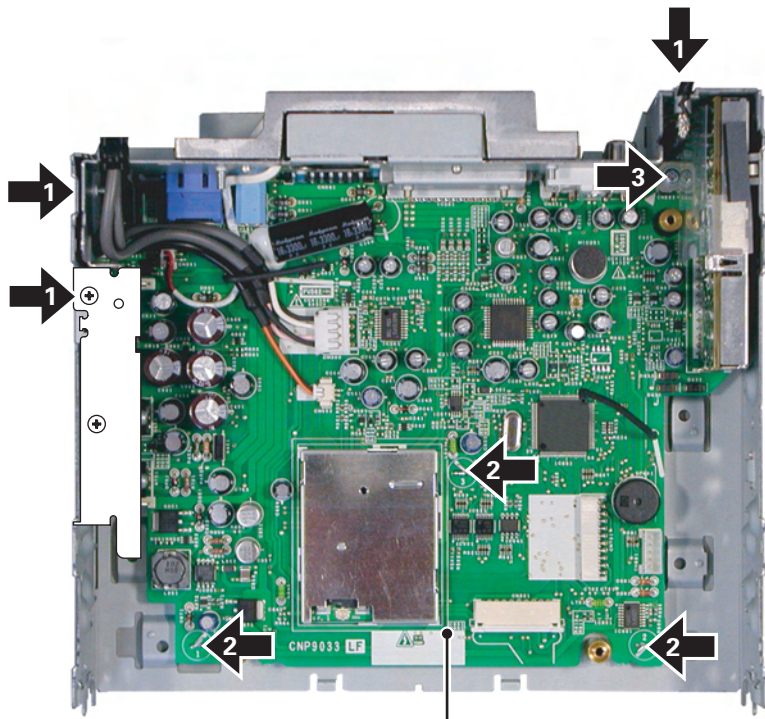
Straighten the tabs at three locations indicated.

3

Remove the screw and then remove the Tuner Amp Unit.

B

C



Tuner Amp Unit

Fig.5

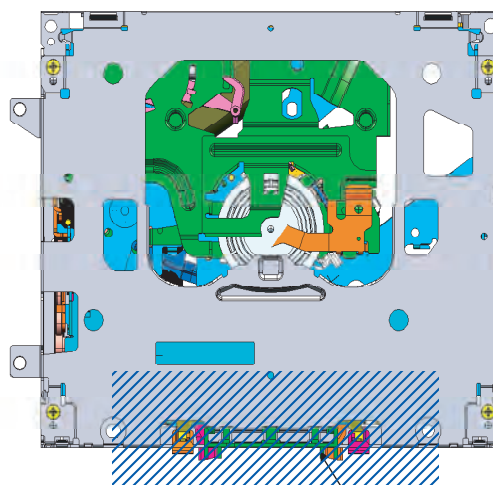
D

E

F

● How to hold the Mechanism Unit

1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.

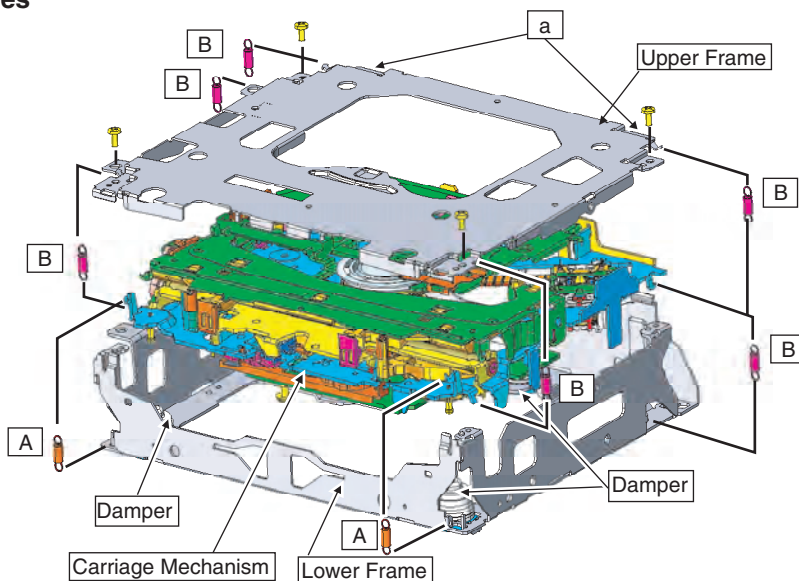


Do not squeeze this area.

● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

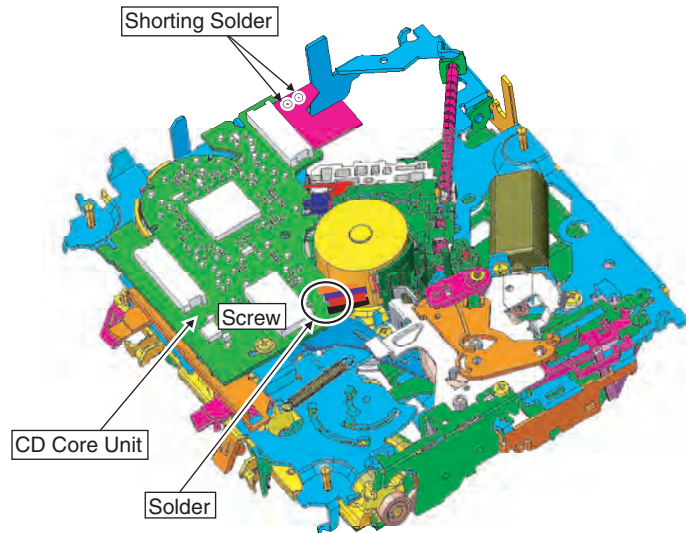
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● How to remove the CD Core Unit

1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.

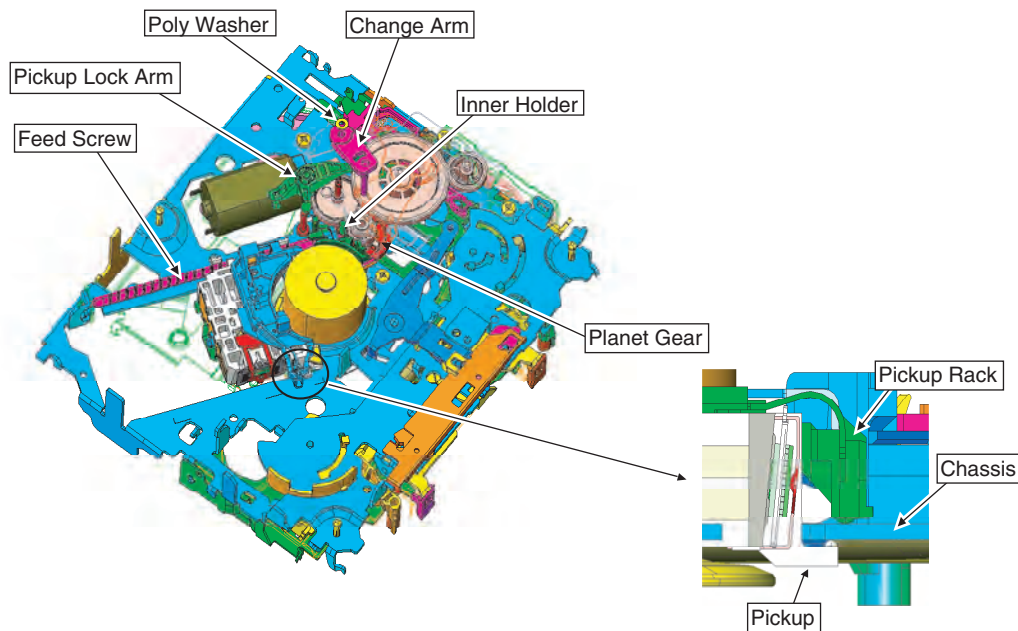


● How to remove the Pickup Unit

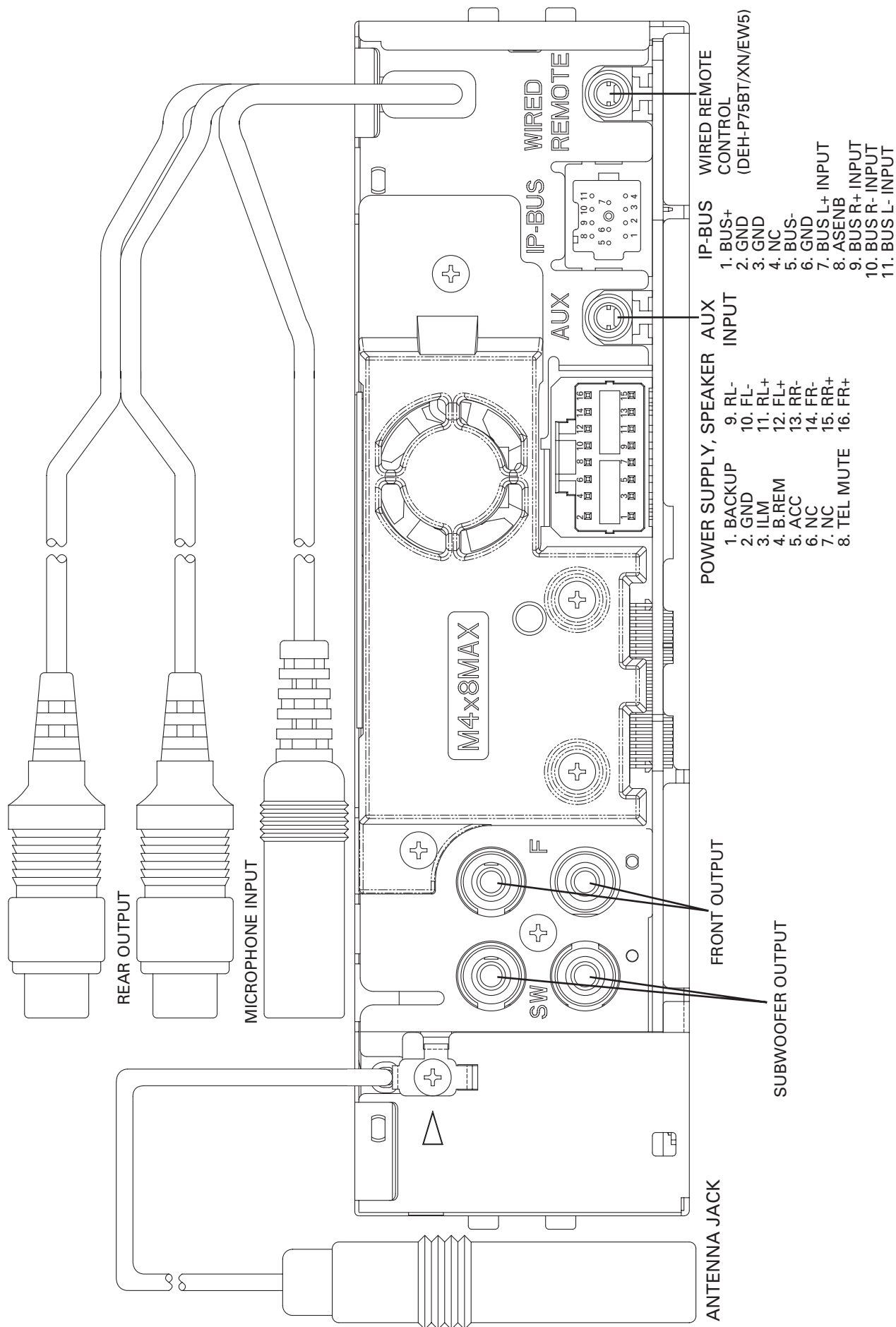
1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



7.1.2 CONNECTOR FUNCTION DESCRIPTION



7.2 IC

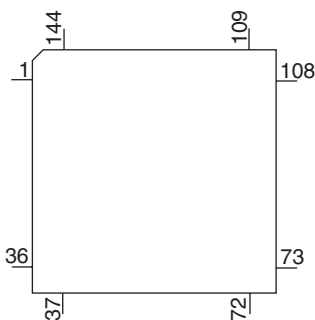
UPD63763CGJ	GP1UX31RK	TC74VHCT08AFTS1	TC7PAU04FU
PE5565A	HA12241FP	TC74VHC08FTS1	AN6123MS
NJM2886DL3-33	PAL007B	PEG262A	AK2301A
PEG168A	PML016B	PEG263A	
PD8158A	S99-50084	TC74VHC02FTS1	

● Pin Functions (UPD63763CGJ)

Pin No.	Pin Name	I/O	Function and Operation
1	D.VDD		Power supply for digital circuits
2	D1.GND		Ground for 1.6 V digital circuits
3	RESET	I	Input of reset
4-8	AB12-8	I	Address bus 12-8 from the microcomputer
9-16	AD7-0	I/O	Address/data bus 7-0 to the microcomputer
17	\overline{CS}	I	Chip selection
18	ASTB	I	Address strobe
19	READ	I	Control signals(read)
20	WRITE	I	Control signals(write)
21	WAIT	O	Control signals(wait)
22	INTQ	O	Interruption signals to the external microcomputer
23,24	IFMODE0,1	I	Switching the microcomputer I/F 0, 1
25	D1.VDD		Power supply for 1.6 V digital circuits
26	DA.VDD		Power supply for DAC
27	ROUT	O	Output of audio for the right channel
28	DA.GND		Ground for DAC
29	REGC		Connected to the capacitor for band gap
30	DA.GND		Ground for DAC
31	LOUT	O	Output of audio for the left channel
32	DA.VDD		Power supply for DAC
33	X.VDD		Power supply for the crystal oscillator
34	XTAL	I	Connected to the crystal oscillator(16.9344 MHz)
35	XTAL	O	Connected to the crystal oscillator(16.9344 MHz)
36	X.GND		Ground for the crystal oscillator
37	VDDREG15		Control of 1.6 V regulator
38	PWMSW0	I	Setup 0 for PWM output(SD, MD)
39-41	TEST3-1	I	Connected to Ground
42	PWMSW1	I	Setup 1 for PWM output(FD, TD)
43	TESTEN	I	Connected to Ground
44	D1.GND		Ground for 1.6 V digital circuits
45	DIN	I	Input of audio data
46	DOUT	O	Output of audio data
47	SCKIN	I	Clock input for audio data
48	SCKO	O	Clock output for audio data
49	LRCKIN	I	Input of LRCK for audio data
50	LRCK	O	Output LRCK for audio data
51	\overline{XTALEN}	I	Permission to oscillate 16.9344 MHz
52	D1.VDD		Power supply for 1.6 V digital circuits
53	RFCK/HOLD	O	Output of RFCK/HOLD signal
54	WFCK/MIRR	O	Output of WFCK/MIRR signal
55	PLCK/RFOK	O	Output of PLCK/Output of RFOK
56	LOCK/RFOK	O	Output of LRCK/Output of RFOK
57	C1D1/C8M/(RA13)	O	Information on error correction/C8M : 8 MHz
58	C1D2/C16M/(RA12)	O	Information on error correction/C16M : 16 MHz
59	C2D1/RMUTE	O	Information on error correction/Mute for Rch
60	C2D2/LMUTE	O	Information on error correction/Mute for Lch
61	C2D3/SHOCK	O	Information on error correction/Detection of vibration
62	D1.GND		Ground for 1.6 V digital circuits
63	C33M	O	Output of 33.8688 MHz(CLK for SDRAM)
64	(RCS)	O	DRAM \overline{CS}
65	RA11	O	Output of DRAM address 11
66	(CKE)	O	Output of DRAM CKE
67	RAS	O	Output of DRAM RAS
68	$\overline{CAS0}$ (LDQM)	O	Output of DRAM lower \overline{CAS} (LDQM)
69	$\overline{CAS1}$ (UDQM)	O	Output of DRAM upper \overline{CAS} (UDQM)

Pin No.	Pin Name	I/O	Function and Operation
70	WE	O	Output of DRAM WE
71	OE(CAS)	O	Output of DRAM OE(CAS)
72	D.GND		Ground for digital circuits
73-88	RDB0-15	I/O	Input/output of DRAM data0-15
89-99	RA0-10	O	Output of DRAM address0-10
100	D.VDD		Power supply for digital circuits
101	FD+	O	Output of focus drive PWM +
102	FD-	O	Output of focus drive PWM -
103	TD+	O	Output of tracking drive PWM +
104	TD-	O	Output of tracking drive PWM -
105	SD+	O	Output of thread drive PWM +
106	SD-	O	Output of thread drive PWM -
107	MD+	O	Output of spindle drive PWM +
108	MD-	O	Output of spindle drive PWM -
109	REFOUTSV	O	REFOUT for servo
110	AD.VDD		Power supply for ADC
111	EFM	O	Output of EFM signals
112	ASY	I	Input of asymmetry
113	ATEST	O	Analog tests
114	RFI	I	Input of RF
115	AD.GND		Ground for the analog system
116	AGCO	O	Output of RF
117	C3T	O	Connection to the capacitor for detecting 3T
118	AGCI	I	Input of AGC
119	RFO	O	Output of RF(AGC)
120,121	EQ2,1	I	Equalizer 2, 1
122	RF2-	I	Reversal input of RF2
123	RF-	I	Reversal input of RF
124	A.GND		Ground for the analog system
125	A	I	Input of A
126	C	I	Input of C
127	B	I	Input of B
128	D	I	Input of D
129	F	I	Input of F
130	E	I	Input of E
131	VREFIN	I	Input of reference voltage
132	A.VDD		Power supply for the analog system
133	REFOUT	O	Output of reference voltage
134	REFC	I	Connected to the capacitor for output of REFOUT
135	FE-	I	Reversal input of FE
136	FEO	O	Output of FE
137	ADIN	I	Input of FE, TE A/D converter
138	TE-	I	Reversal input of TE
139	TEO	O	Output of TE
140	TE2	O	TE2
141	TEC	I	TEC
142	LD	O	Output of LD
143	PD	I	Input of PD
144	D.GND		Ground for digital circuits

UPD63763CGJ

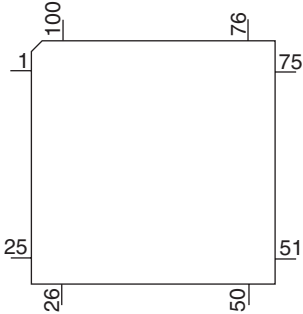


Pin Functions (PE5565A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	AVREF			A power supply / Positive power supply(5V)
2	AVSS			A power supply GND
3	TESTIN	I		Chip check test program starting input
4	CLAMP			Not used
5	EVDD			E power supply / Positive power supply
6	FMODE			For flash rewriting / L : flash rewriting mode
7	FLRQ			For flash rewriting / Reset voltage control
8	IC/FLMOD0			IC : VSS direct connection/FLMOD0 : Pull-down
9	VDD			Positive power supply(5V)
10	REGC			Connected to the capacity stabilizing output of the regulator
11	VSS			GND
12	X1	I		Oscillator connection for mainclock
13	X2			Oscillator connection for mainclock
14	RESET	I		System reset input
15	XT1	I		Connected to the oscillator for subclock(connected to VSS via the resistor)
16	XT2			Connected to the oscillator for subclock(Open)
17	PULLDOWN	I		Connected to EVDD or EVSS via the resistor
18	EJSW			Not used
19	XINT	I	C	CD LSI interruption signal input
20	NC			Not used
21	BRST	I		Bus reset input
22	BSI	I		Bus serial data input
23	BSO	O	C	Bus serial data output
24	BSCK	I/O	/C	Bus serial clock input/output
25	FTxD	O	C	For flash rewriting(transmitted signal)
26	FRxD	I		For flash rewriting(received signal)
27	BRXEN	I/O	/C	Bus RX enable input/output
28	BSRQ	I/O	/C	Bus serial clock input/output
29	DSPOK			Not used
30	DSCSNS	I	C	Disc state sense input
31	8EJ(S905)	I	C	input of detection of 8 cm disc ejection
32	12EJ(S904)	I	C	input of detection of 12 cm disc ejection
33	EVSS			E power supply GND
34	EVDD			E power supply / Positive power supply
35,36	SRAMLEVEL0,1	O		SRAM level meter output
37	EMPH	O	C	Emphasis information output
38	EMPH			Not used
39	CDMUTE			Not used
40	LOEJ			Not used
41	CLCONT	O		Driver input switching output
42	HOME	I		Home SW sense input
43	ADENA	O	C	A/D reference voltage supply control output
44	LRCKOK	O	C	(DOUT mute output)
45	SRAMLEVEL2	O	C	SRAM level meter output
46	CD3VON(MCKRQ)	O	C	CD + 3.3 V power supply control output(Digital output : MCKRQ)
47	CONT	O	C	Servo driver power supply control output
48	XRST	O	C	CD LSI reset control output
49	VDCONT	O	C	VD power supply control output
50	XSI	I		CD LSI serial data input
51	XSO	O	C	CD LSI serial data output
52	XCK	O	C	CD LSI serial clock output
53	XWAIT	I	C	CD LSI wait control signal input
54	XASTB	O	C	CD LSI address strobe output
55	AD0	O	C	Address/data Bus 0
56	INT			Not used

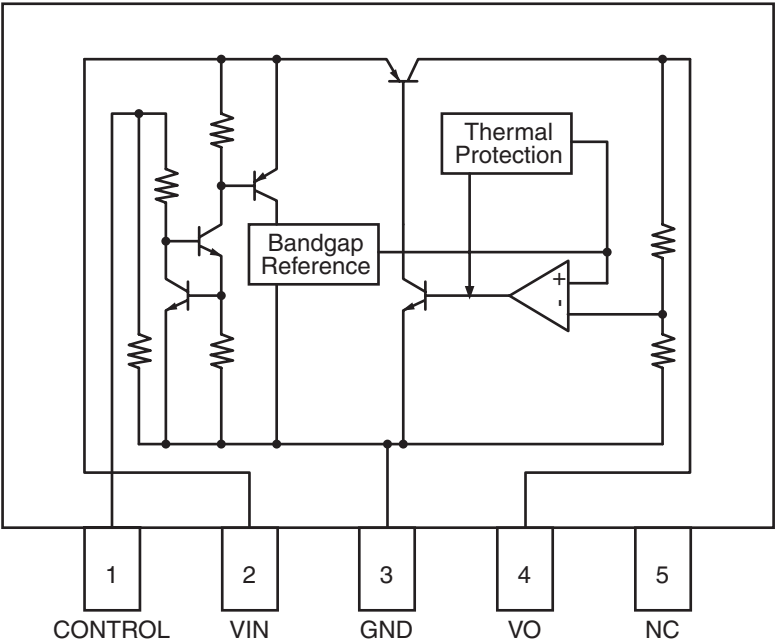
Pin No.	Pin Name	I/O	Format	Function and Operation
57	ROMDATA	I/O		E2PROM data input/output
58	ROMCK	O		E2PROM clock output
59	ROMCS	O	C	E2PROM chip selection output
60,61	NC			Not used
62	CLKOUT			Not used
63	LOCK	I		Spindle lock input
64-68	NC			Not used
69	BVSS			B power supply GND
70	BVDD			B power supply / Positive power supply
71-75	NC			Not used
76	FLMD1	I/O	/C	Address/Data Bus 5
77-90	NC			Not used
91-93	A/D			Not used
94	CSENS			Not used
95	TYPE_A/D			Not used
96,97	NC			Not used
98	TEMP			Not used
99	VDSSENS	I		VD power supply short sense input
100	DSCSNS			Not used

PE5565A



Format	meaning
C	C MOS

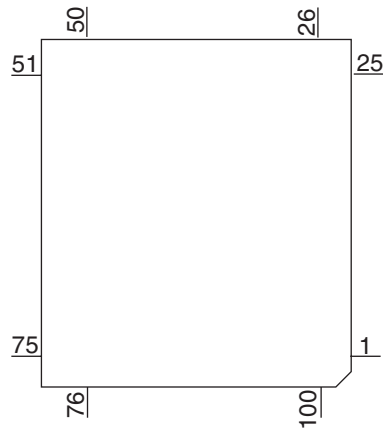
NJM2886DL3-33



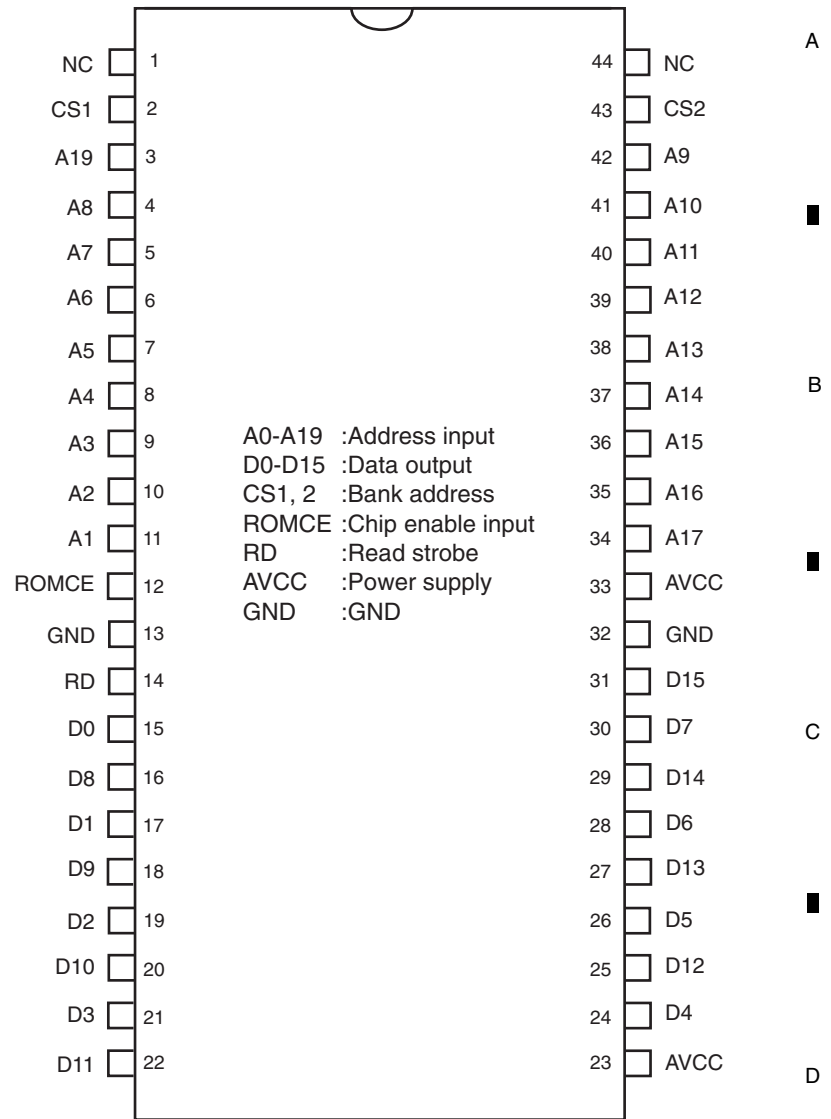
Pin Functions (PEG168A)

Pin No.	Pin Name	I/O	Function and Operation
1	BTLED	O	Bluetooth attestation LED output
2	ROMDT	I/O	ROM data input/output
3	ROMCK	I	ROM clock input
4	REM	I	Remote control input
5	ROMCS		ROM chip select
6	BYTE		GND
7	CNVSS		GND
8,9	NC		Not used
10	RESET	I	Reset input
11	XOUT	O	Main clock output
12	VSS1		VSS
13	XIN	I	Main clock input
14	VCC1		VCC
15	NMI	I	NMI input
16	NC		Not used
17-20	KS3-0	I/O	Key strobe input/output
21	NC		Not used
22	D_SEL		Data select
23	NC		Not used
24	CKD	O	Data transfer and a driver operation clock output
25	NC		Not used
26	LS	O	Line sink signal output
27	DPDT	I	Display data communication input
28	KYDT	O	Key data communication output
29-32	NC		Not used
33	OELD	O	Display data output
34	NC		Not used
35	CLK0	I	Clock input for UART1
36	NC		Not used
37	RDY		(Pull up)
38	NC		Not used
39	HOLD		(Pull up)
40,41	NC		Not used
42	RD	O	Read strobe output
43,44	NC		Not used
45,46	BANK2,1	O	Bank address output
47	NC		Not used
48	CS0		ROM chip select
49-59	A19-9	O	Address bus output
60	VCC2		VCC
61	A8	O	Address bus output
62	VSS2		VSS
63-70	A7-0	O	Address bus output
71-86	D15-0	I/O	Data bus input/output
87	NC		Not used
88	JOYST	I	Joystick input
89,90	NC		Not used
91-93	KD3-1	I	Key data input
94	AVSS		VSS
95	KD0	I	Key data input
96	VREF		VSS
97	AVCC		VCC
98-100	NC		Not used

PEG168A

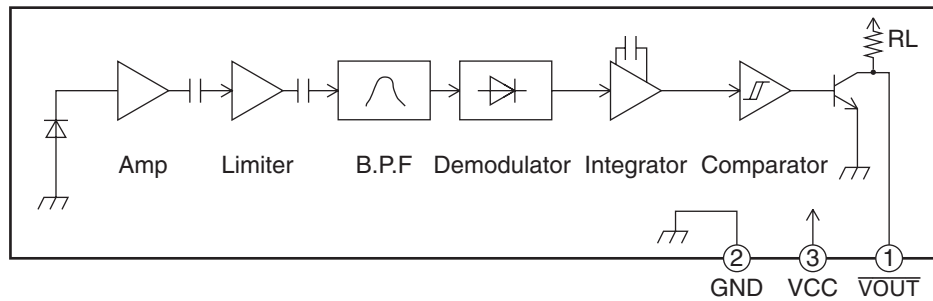


PD8158A

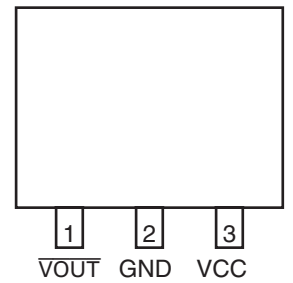


GP1UX31RK

● Block Diagram



● Pin Layout



HA12241FP

A

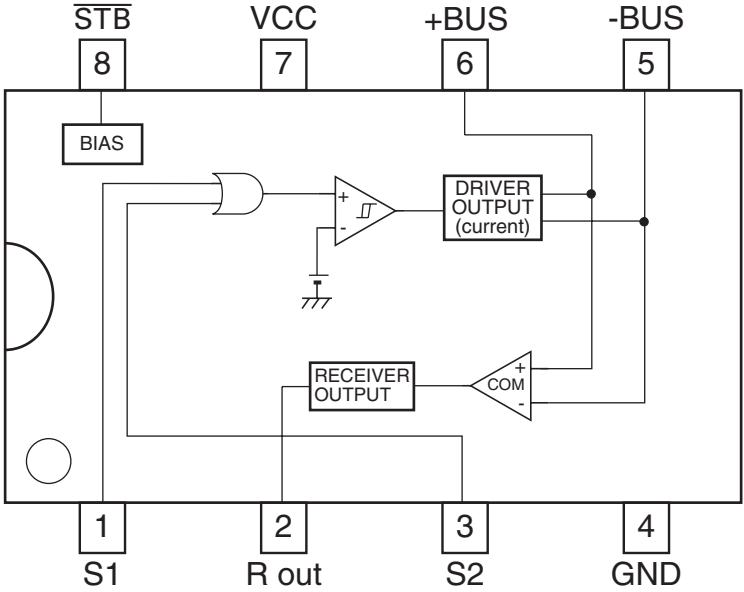
B

C

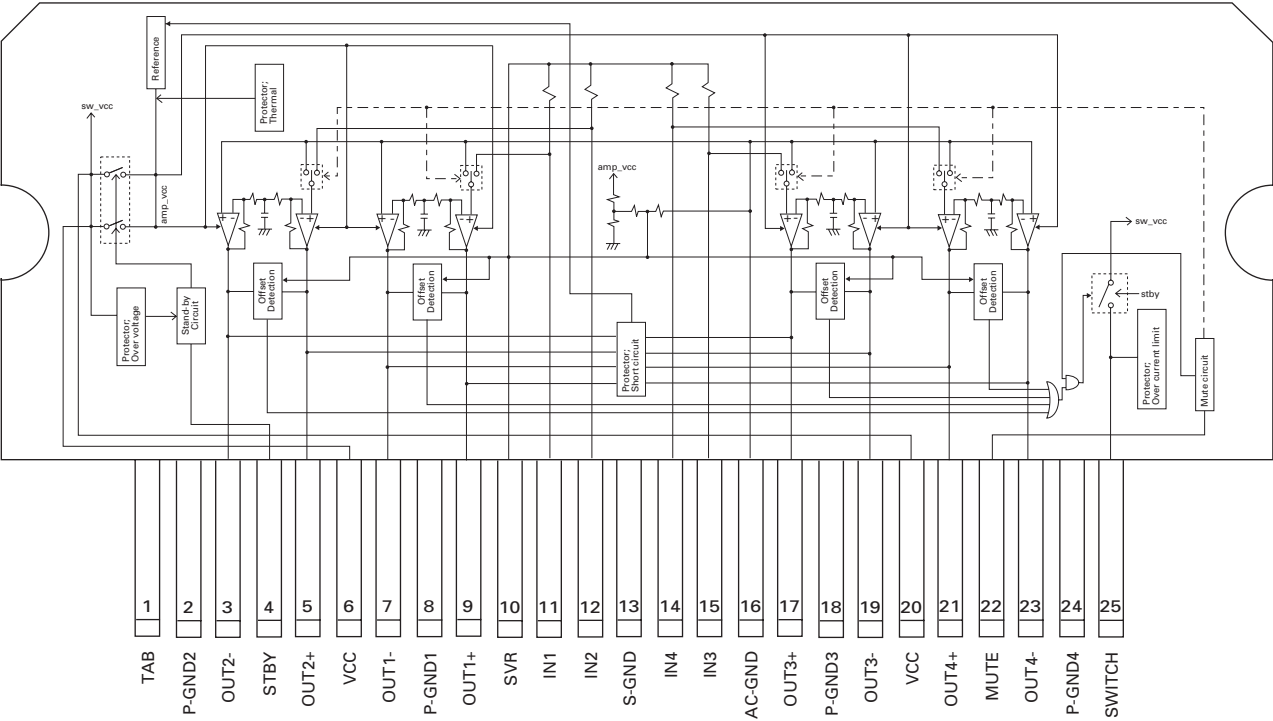
D

E

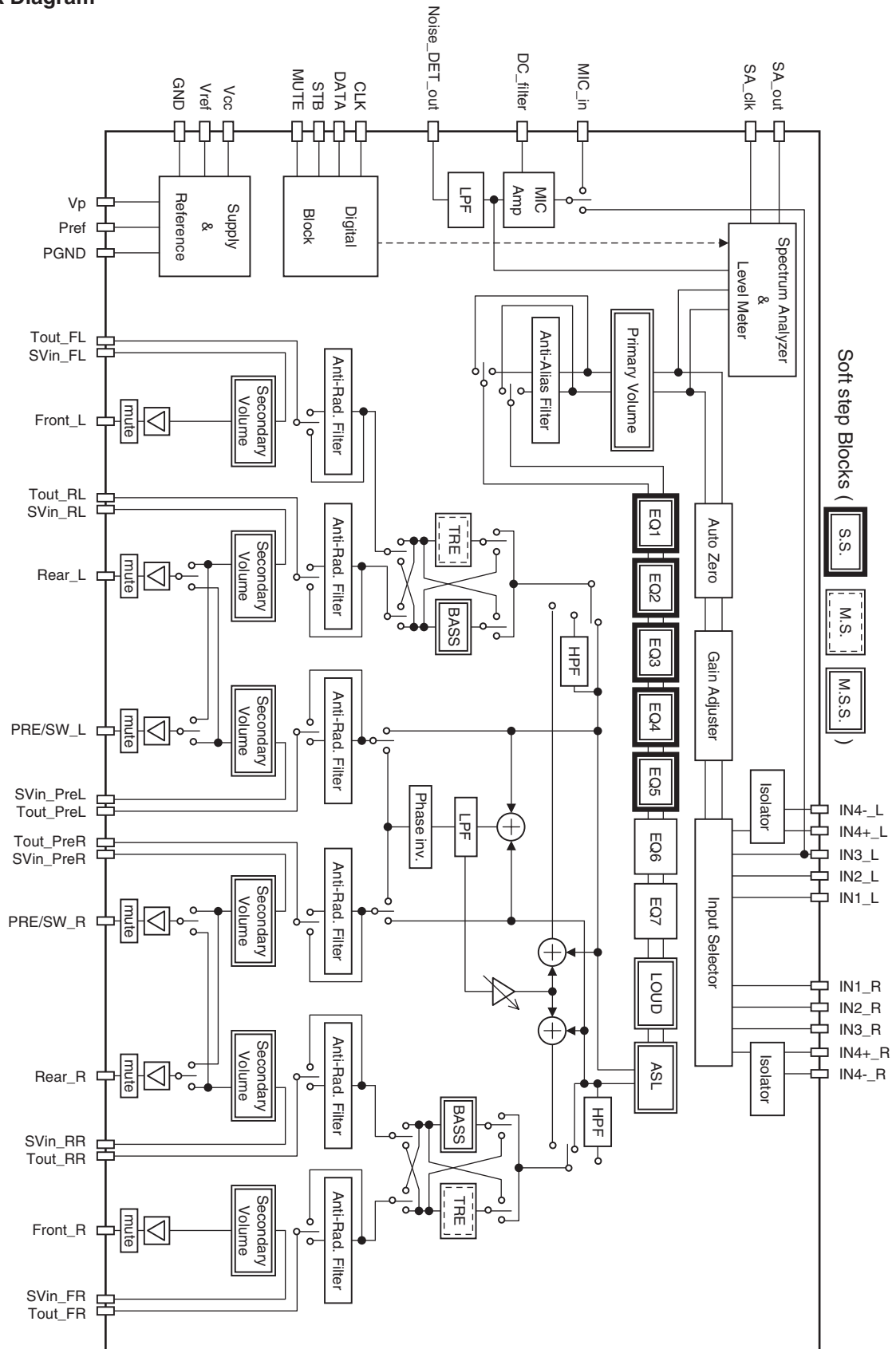
F



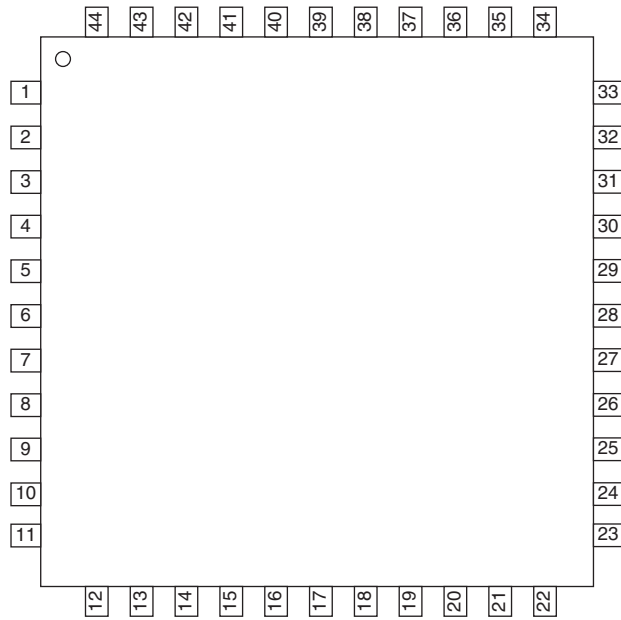
PAL007B



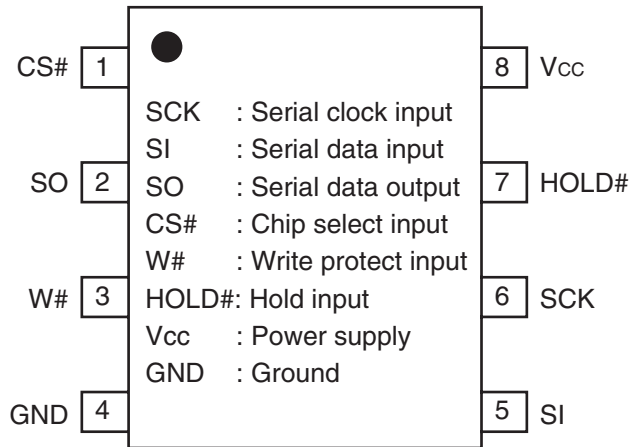
PML016B
 ● Block Diagram



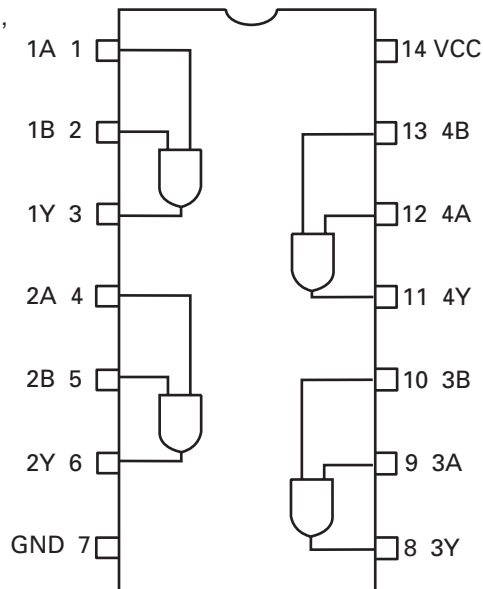
● Pin Layout



S99-50084



TC74VHCT08AFTS1,
TC74VHC08FTS1



● Pin Functions(PEG262A, PEG263A)

Pin No.	Pin Name	I/O	Function and Operation
1	SYSPW	O	System power control output
2	KEYD	I	Key data input
3	MEMDO	O	External memory : Data output
4	MEMDI	I	External memory : Data input
5	MEMCK	O	External memory : Clock output
6	BYTE	I	External data bus width change input
7	CNVSS	I	Processor mode change input
8	TELIN	I	Mobile phone mute input
9	NC		Not used
10	RESET	I	Reset input
11	XOUT	O	Clock output
12	VSS		GND
13	XIN	I	Clock input
14	VCC	I	Power supply input
15	NMI	I	NMI input
16	RCK	I	RDS : Clock input
17	LDET	I	RDS : PLL lock detect input
18	OELPW	O	OEL power supply output
19	RX2	I	IPBUS : Input 2
20,21	NC		Not used
22	PEE	O	PEE sound output
23	NC		Not used
24	BRST	O	P-BUS : Reset output
25	BRXEN	I/O	P-BUS : Reception enable input/output
26	PEE	O	Beep output
27	RX	I	IPBUS : Input
28	TX	O	IPBUS : Output
29	DPDT	O	GRILLE : Data output
30	KYDT	I	GRILLE : Data input
31	NC		Not used
32	BRSQ	I	P-BUS : Service request input
33	BTTX	O	BT driver : Data output
34	BTRX	I	BT driver : Data input
35	NC		Not used
36	ROT0	I	Rotary encoder 0 input
37	ILMPW	O	Illumination output
38	SWVDD	O	GRILLE : Chip enable output
39	ROT1	I	Rotary encoder 1 input
40	FLPILM	O	Illumination output inside flap
41	PCL	O	Output for clock adjustment
42	MEMCS	O	External memory : Chip select output
43	MEMWP	O	External memory : Write protect output
44	EVOLSW1	O	EVOL : Source select switch 1 output
45	EVOLSW2	O	EVOL : Source select switch 2 output
46	TUNPDI	I	TUNER : PLL communication
47	TUNPDO	O	TUNER : Data output(PLL)
48	TUNPCK	O	TUNER : Clock output(PLL)
49	FLPPW	O	FLAP : Motor power supply output
50	FOPNSW	I	FLAP : Open sense swith input
51	FCLSSW	I	FLAP : Close sense swith input
52	FLPCLS	O	FLAP : Close operation output
53	FLPOPN	O	FLAP : Open operation output
54	DACCS	O	DAC : Chip select output
55	DACDT	O	DAC : Data output
56	DACCK	O	DAC : Clock output
57	EMUTE	O	EVOL : Mute output

A

B

C

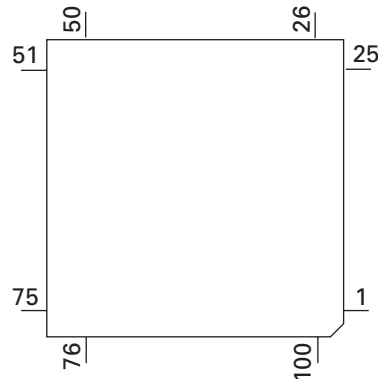
D

E

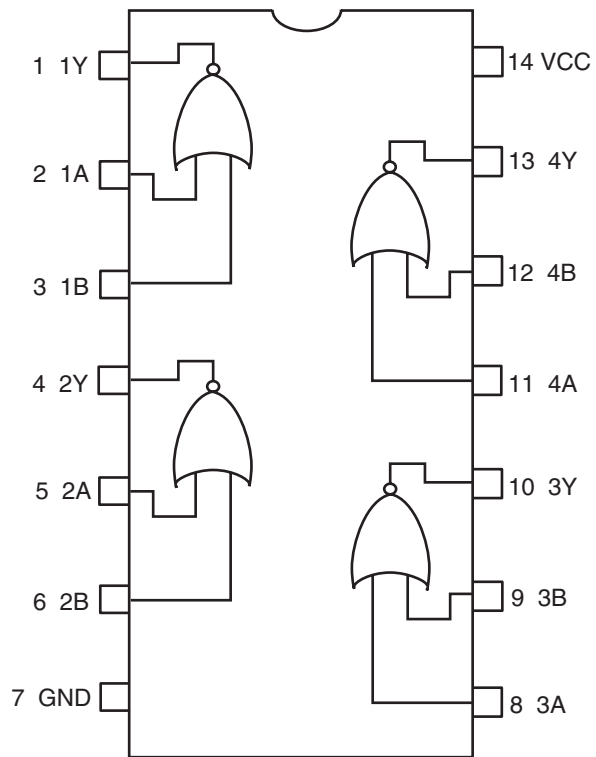
F

Pin No.	Pin Name	I/O	Function and Operation
58	SACLK	O	Level indicator clock output
59	NC		Not used
60	VCC		Power supply input
61	BTCTS	I	BT driver : CTS input
62	VSS		GND
63	BTTEST	O	BT driver : RF test output
64	BTPW	O	BT driver : Power supply ON/OFF output
65	BTRST	O	BT driver : Reset output
66	BTMUTE	O	Mute output for Bluetooth sound codec
67	DALMON	O	For consumption current reduction output
68	BTRTS	O	BT driver : RTS output
69	TUNPCE2	O	TUNER : Chip enable output(EEPROM)
70	TUNPCE1	O	TUNER : Chip enable output(PLL)
71	ROMCS	O	ROM correction : Chip select output
72	ASENS	I	ACC sense input
73	BSENS	I	Back up sense input
74	ROMCK	O	ROM correction : Clock output
75	ROMDATA	I/O	ROM correction : Data input/output
76	VST	O	EVOL : Strobe output
77	VDT	O	EVOL : Data output
78	VCK	O	EVOL : Clock output
79	IPPW	O	IPBUS : Driver power supply control output
80	ASENBO	O	IPBUS : Slave ACC sense output
81	ISENS	I	Illumination sense input
82	RDS 57K	I	RDS : 57kHz pulse count input
83	RDT	I	RDS : Data input
84	RDSLK	I	RDS : Lock signal input
85	MUTE	O	MUTE output
86	TESTIN	I	Test program input
87	NC		Not used
88	BATIND	I	Battery indicator input
89	KEYAD	I	Key data input
90	SAOUT	I	Level indicator input
91	DSENS	I	Detach sense input
92	RST2	O	CD reset output
93	ASLIN	I	ASL input
94	AVSS		AD translation power supply input terminal
95	SL	I	TUNER : Signal level input
96	VREF		AD translation reference voltage
97	AVCC		AD translation power supply input terminal
98	BSI	I	P-BUS : Serial data input
99	BSO	O	P-BUS : Serial data output
100	BSCK	O	P-BUS : Serial clock output

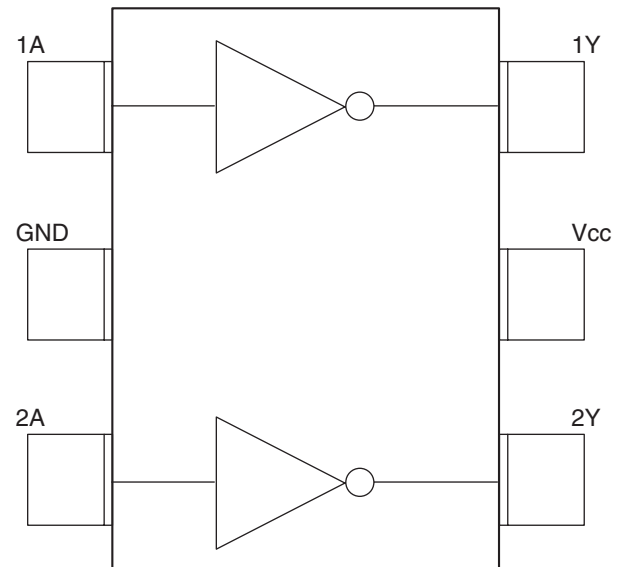
PEG262A(DEH-P75BT/XN/EW5)
PEG263A(DEH-P7850BT/XN/ES)



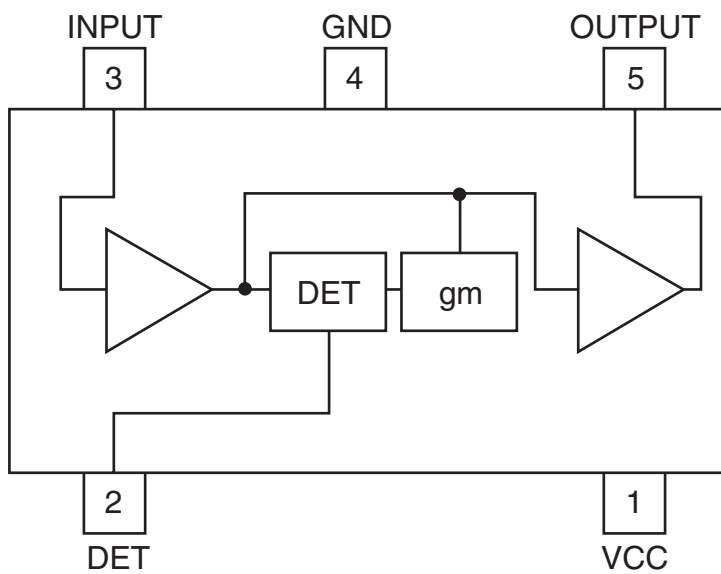
TC74VHC02FTS1



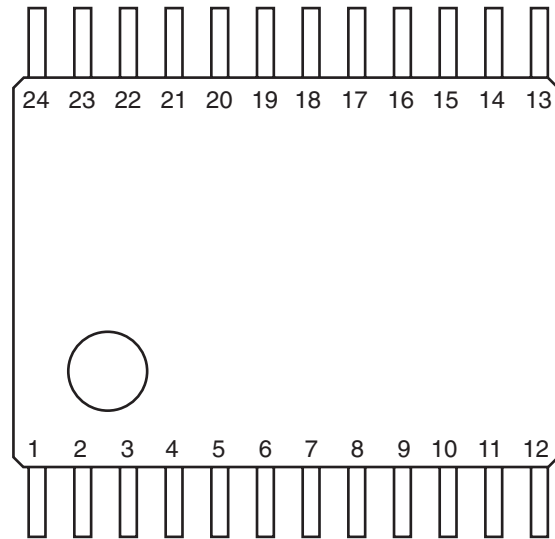
TC7PAU04FU



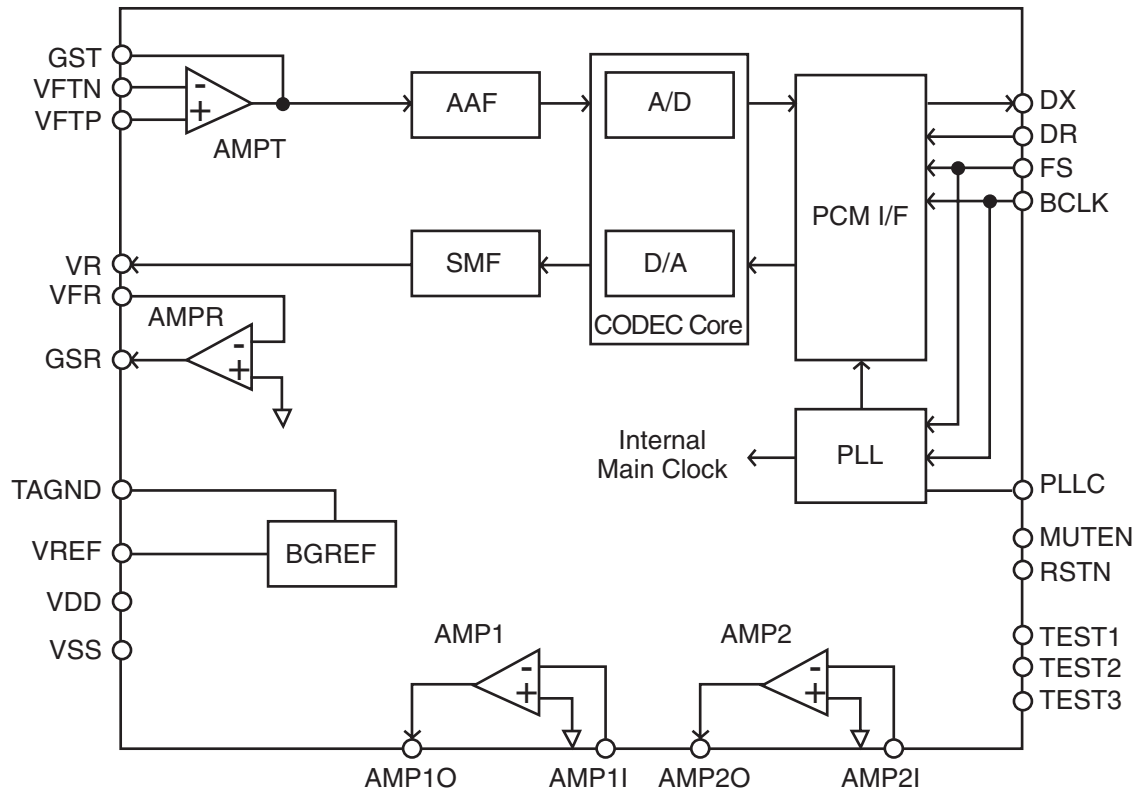
AN6123MS



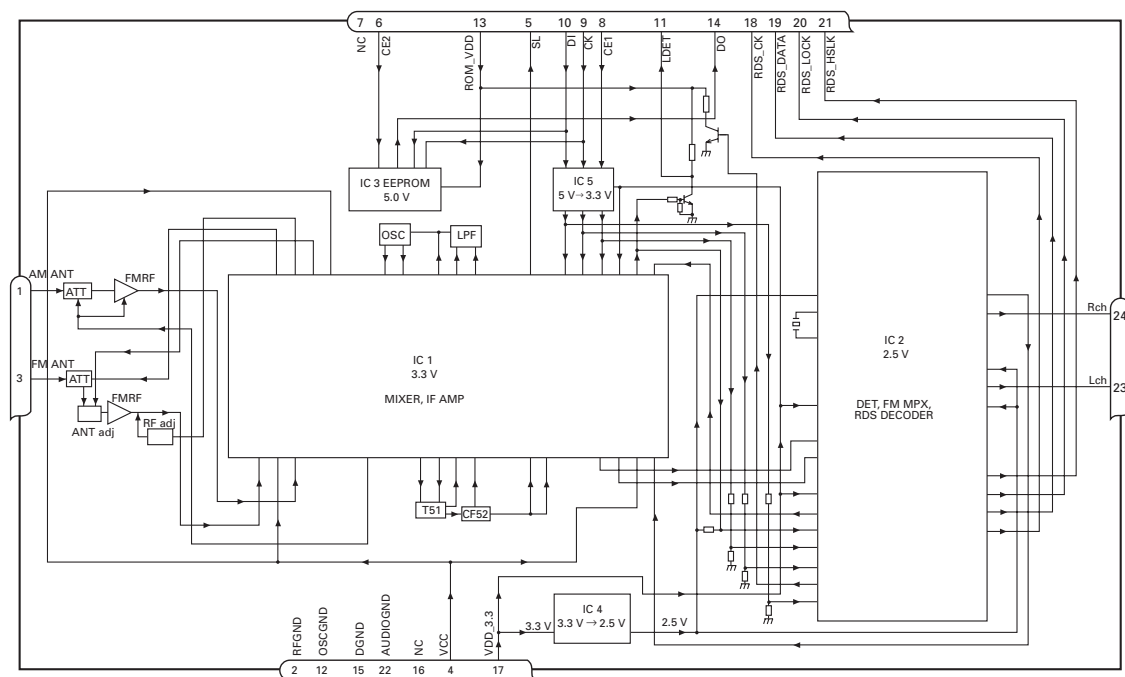
● Pin Layout



● Block Diagram

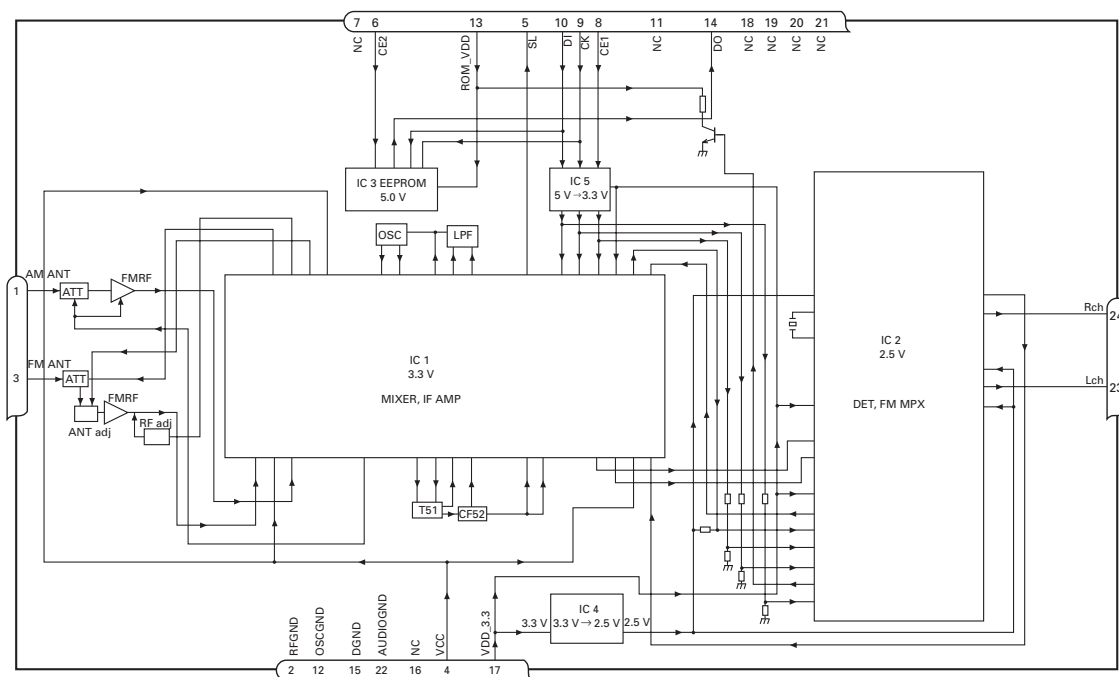


● FM/AM Tuner Unit(DEH-P75BT/XN/EW5)



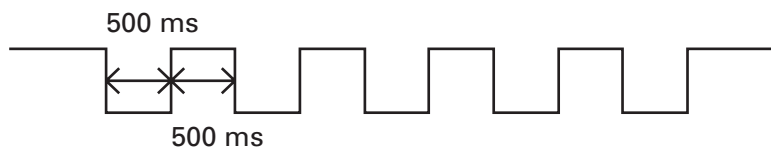
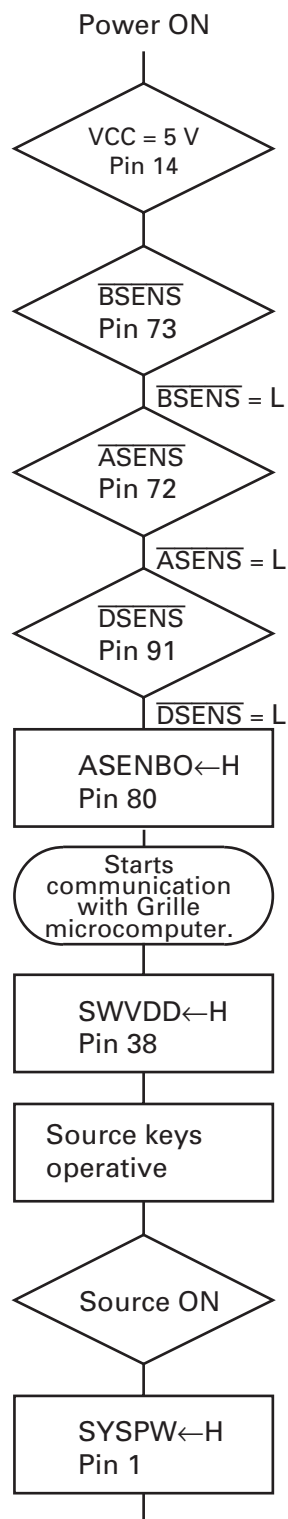
No.	Symbol	I/O	Explain	
1	AMANT	I	AM antenna input	AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μ H. (LAU type inductor) A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground	Ground of antenna block
3	FMANT	I	FM antenna input	Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply	The power supply for analog block. D.C 8.4 V \pm 0.3 V
5	SL	O	signal level	Output of FM/AM signals level
6	CE2	I	chip enable-2	Chip enable for EEPROM "Low" active
7	NC		non connection	Not used
8	CE1	I	chip enable-1	Chip enable for AF•RF "High" active
9	CK	I	clock	Clock
10	DI	I	data in	Data input
11	LDET	O	lock detector	"Low" active
12	OSCGND		osc ground	Ground of oscillator block
13	ROM_VDD		power supply	Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out	Data output
15	DGND		digital ground	Ground of digital block
16	NC		non connection	Not used
17	VDD_3.3		power supply	The power supply for digital block. 3.3 V \pm 0.2 V
18	RDS_CK	O	RDS clock	Output of RDS clock(2.5 V)
19	RDS_DATA	O	RDS data	Output of RDS data(2.5 V)
20	RDS_LOCK	O	RDS lock	Output unit "High" active(2.5 V) (RDS_LOCK turns over by the external transistor. "Low" active)
21	RDS_HSLK	O	RDS high speed lock	Output unit "High" active(2.5 V)(RDS_HSLK turns over by the external transistor. "Low" active)
22	AUDIOGND		audio ground	Ground of audio block
23	L ch	O	L channel output	FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output	FM stereo "R-ch" signal output or AM audio output

FM/AM Tuner Unit(DEH-P7850BT/XN/ES)



No.	Symbol	I/O	Explain
1	AMANT	I	AM antenna input AM antenna input high impedance AMANT pin is connected with an all antenna by way of 4.7 μ H. (LAU type inductor)A series circuit including an inductor and a resistor is connected with RF ground for the countermeasure against the hum of power transmission line.
2	RFGND		RF ground Ground of antenna block
3	FMANT	I	FM antenna input Input of FM antenna 75 Ω Surge absorber(DSP-201M-S00B)is necessary.
4	VCC		power supply The power supply for analog block. D.C 8.4 V \pm 0.3 V
5	SL	O	signal level Output of FM/AM signals level
6	CE2	I	chip enable-2 Chip enable for EEPROM "Low" active
7	NC		non connection Not used
8	CE1	I	chip enable-1 Chip enable for AF•RF "High" active
9	CK	I	clock Clock
10	DI	I	data in Data input
11	NC		non connection Not used
12	OSCGND		osc ground Ground of oscillator block
13	ROM_VDD		power supply Power supply for EEPROM pin 13 is connected with a power supply of micro computer.
14	DO	O	data out Data output
15	DGND		digital ground Ground of digital block
16	NC		non connection Not used
17	VDD_3.3		power supply The power supply for digital block. 3.3 V \pm 0.2 V
18	NC		non connection Not used
19	NC		non connection Not used
20	NC		non connection Not used
21	NC		non connection Not used
22	AUDIOGND		audio ground Ground of audio block
23	L ch	O	L channel output FM stereo "L-ch" signal output or AM audio output
24	R ch	O	R channel output FM stereo "R-ch" signal output or AM audio output

7.3 OPERATIONAL FLOW CHART

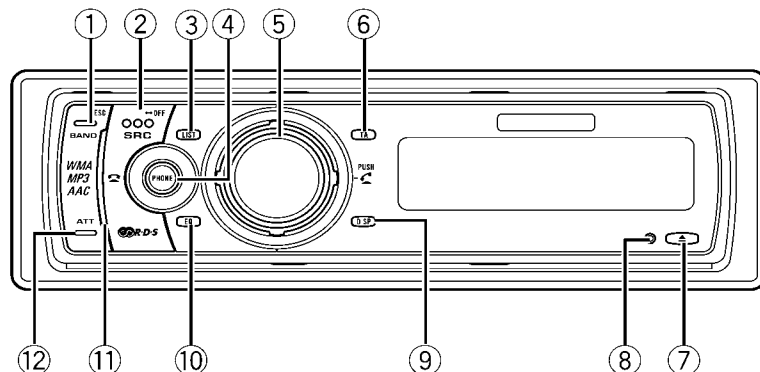


In case of the above signal, the communication with Grille microcomputer may fail.
If the time interval is not 500 msec, the oscillator may be defective.

Completes power-on operation.
(After that, proceed to each source operation)

8. OPERATIONS

● DEH-P75BT/XN/EW5



Head unit

① BAND button

Press to select among three FM bands and MW/LW bands and to cancel the control mode of functions.

② SOURCE button

This unit is turned on by selecting a source. Press to cycle through all the available sources.

③ LIST button

Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.

④ PHONE button

Press to select the phone as the source. While operating a phone source, press to end a call, reject an incoming call or cancel making a call.

⑤ MULTI-CONTROL

Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Turn to increase or decrease the volume.

⑥ TA/NEWS button

Press to turn TA function on or off. Press and hold to turn NEWS function on or off.

⑦ EJECT button

Press to eject a CD from your built-in CD player. Press and hold to open or close the front panel.

⑧ RESET button

Press to reset the microprocessor.

⑨ DISPLAY button

Press to select different displays.

⑩ EQ button

Press to select various equalizer curves.

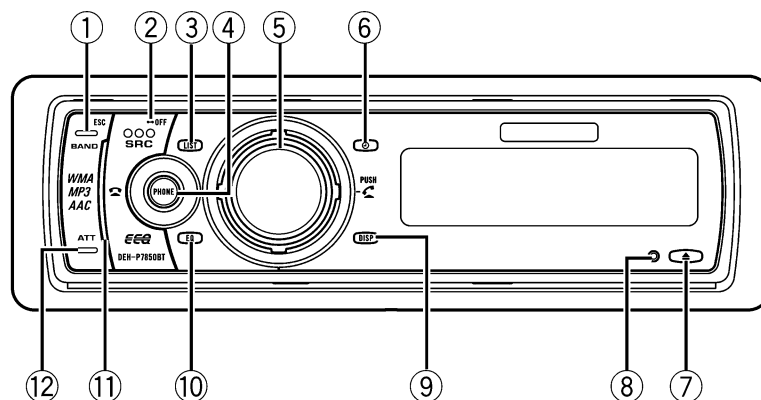
⑪ Connection status indicator

Lights up when your cellular phone is connected via Bluetooth wireless technology.

⑫ ATT button

Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level. ■

● DEH-P7850BT/XN/ES



Head unit

① **BAND button**

Press to select among three FM bands and one AM band and to cancel the control mode of functions.

② **SOURCE button**

This unit is turned on by selecting a source. Press to cycle through all the available sources.

③ **LIST button**

Press to display the disc title list, track title list, folder list, file list or preset channel list depending on the source.

④ **PHONE button**

Press to select the phone as the source. While operating a phone source, press to end a call, reject an incoming call or cancel making a call.

⑤ **MULTI-CONTROL**

Move to perform manual seek tuning, fast forward, reverse and track search controls. Also used for controlling functions. Turn to increase or decrease the volume.

⑥ **CLOCK button**

Press to change to the clock display.

⑦ **EJECT button**

Press to eject a CD from your built-in CD player. Press and hold to open or close the front panel.

⑧ **RESET button**

Press to reset the microprocessor.

⑨ **DISPLAY button**

Press to select different displays.

⑩ **EQ button**

Press to select various equalizer curves.

⑪ **Connection status indicator**

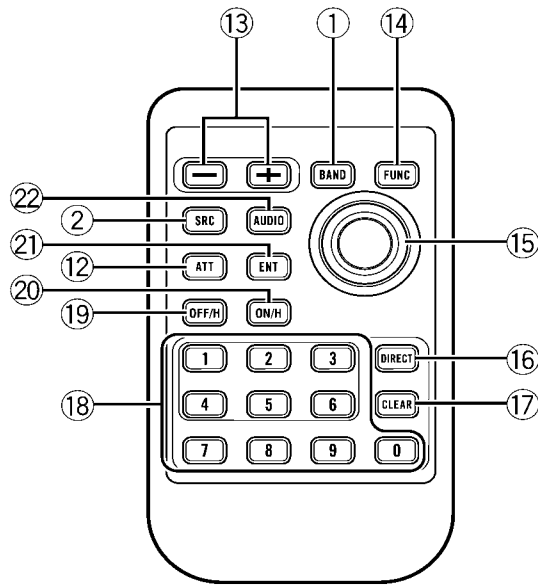
Lights up when your cellular phone is connected via Bluetooth wireless technology.

⑫ **ATT button**

Press to quickly lower the volume level, by about 90%. Press once more to return to the original volume level. ■

Remote control

Operation is the same as when using the buttons on the head unit.



the tuner or disc number search for the multi-CD player.

19 OFF HOOK button

Press to start talking on the phone while operating a phone source.

20 ON HOOK button

While operating the phone source, press to end a call or reject an incoming call.

21 ENTERTAINMENT button

Press to change to the entertainment display.

22 AUDIO button

Press to select various sound quality controls. 

13 VOLUME buttons

Press to increase or decrease the volume.

14 FUNCTION button

Press to select functions.

15 Joystick

Move to perform manual seek tuning, fast forward, reverse and track search controls.

Also used for controlling functions.

Functions are the same as

MULTI-CONTROL except for volume control.

16 DIRECT button

Press to directly select the desired track.

17 CLEAR button

Press to cancel the input number when **0-9** are used.

18 0-9 buttons

Press to directly select the desired track, preset tuning or disc. In the **Telephone** source, press to dial a phone number. Buttons **1-6** can operate the preset tuning for

Turning the unit on

- **Press SOURCE to turn the unit on.**

When you select a source, the unit is turned on. 

Selecting a source

You can select a source you want to listen to. To switch to the built-in CD player, load a disc in the unit.

- **Press SOURCE to select a source.**

Press **SOURCE** repeatedly to switch between the following sources:


Tuner—Television—DVD player/Multi-DVD player—Built-in CD player—Multi-CD player—iPod—External unit 1—External unit 2—AUX1—AUX2—Telephone—BT Audio



Notes

- In the following cases, the sound source will not change:
 - When there is no unit corresponding to the selected source connected to this unit.
 - When there is no disc in the unit.
 - When there is no disc in the DVD player.
 - When there is no magazine in the multi-CD player.
 - When there is no magazine in the multi-DVD player.
 - When the AUX (auxiliary input) is set to off.
 - When the **BT Audio** source is set to off.
- External unit refers to a Pioneer product (such as one available in the future) that, although incompatible as a source, enables control of basic functions by this unit. Two external units can be controlled by this unit. When two external units are connected, the allocation of

them to external unit 1 or external unit 2 is automatically set by this unit.

- When this unit's blue/white lead is connected to the vehicle's auto-antenna relay control terminal, the vehicle's antenna extends when this unit's source is turned on. To retract the antenna, turn the source off. 

Loading a disc

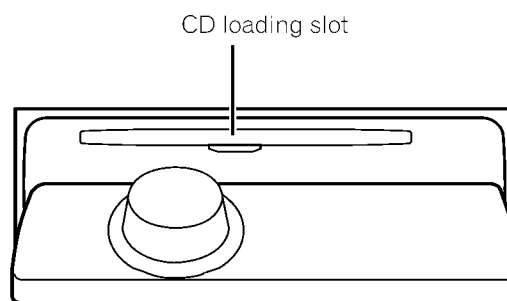
- 1 Press EJECT to open the front panel.**

CD loading slot appears.

- After a CD has been inserted, press **SOURCE** to select the built-in CD player.

- 2 Insert a CD into the CD loading slot.**

Front panel is closed automatically, and playback will start.




- You can eject a CD by pressing **EJECT**.



Notes

- The built-in CD player plays one standard, 12-cm or 8-cm CD at a time. Do not use an adapter when playing 8-cm CDs.
- Do not insert anything other than a CD into the CD loading slot.
- There is sometimes a delay between starting up CD playback and the sound being issued. When being read, **Format read** is displayed.

A

- If you cannot insert a disc completely or if after you insert a disc the disc does not play, check that the label side of the disc is up. Press **EJECT** to eject the disc, and check the disc for damage before inserting it again.
- When the CD loading or ejecting function does not operate properly, you can eject the CD by pressing and holding **EJECT** while opening the front panel.
- If an error message such as **ERROR-11** is displayed. 


B

■ Adjusting the volume

- Use **MULTI-CONTROL** to adjust the sound level.

With the head unit, turn **MULTI-CONTROL** to increase or decrease the volume.

C

With the remote control, press **VOLUME** to increase or decrease the volume. 

■

Turning the unit off

- Press **SOURCE** and hold until the unit turns off. 

D

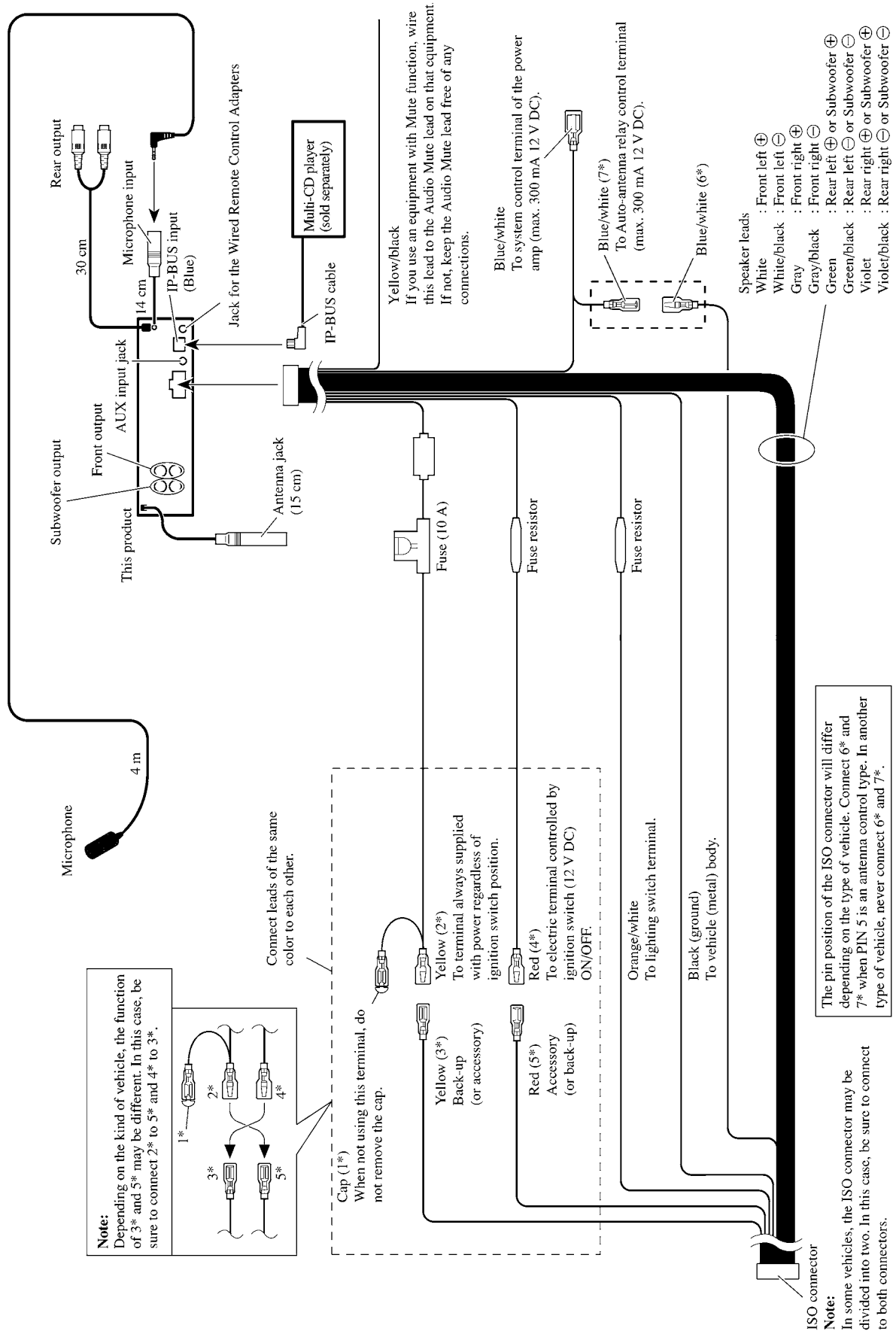
■

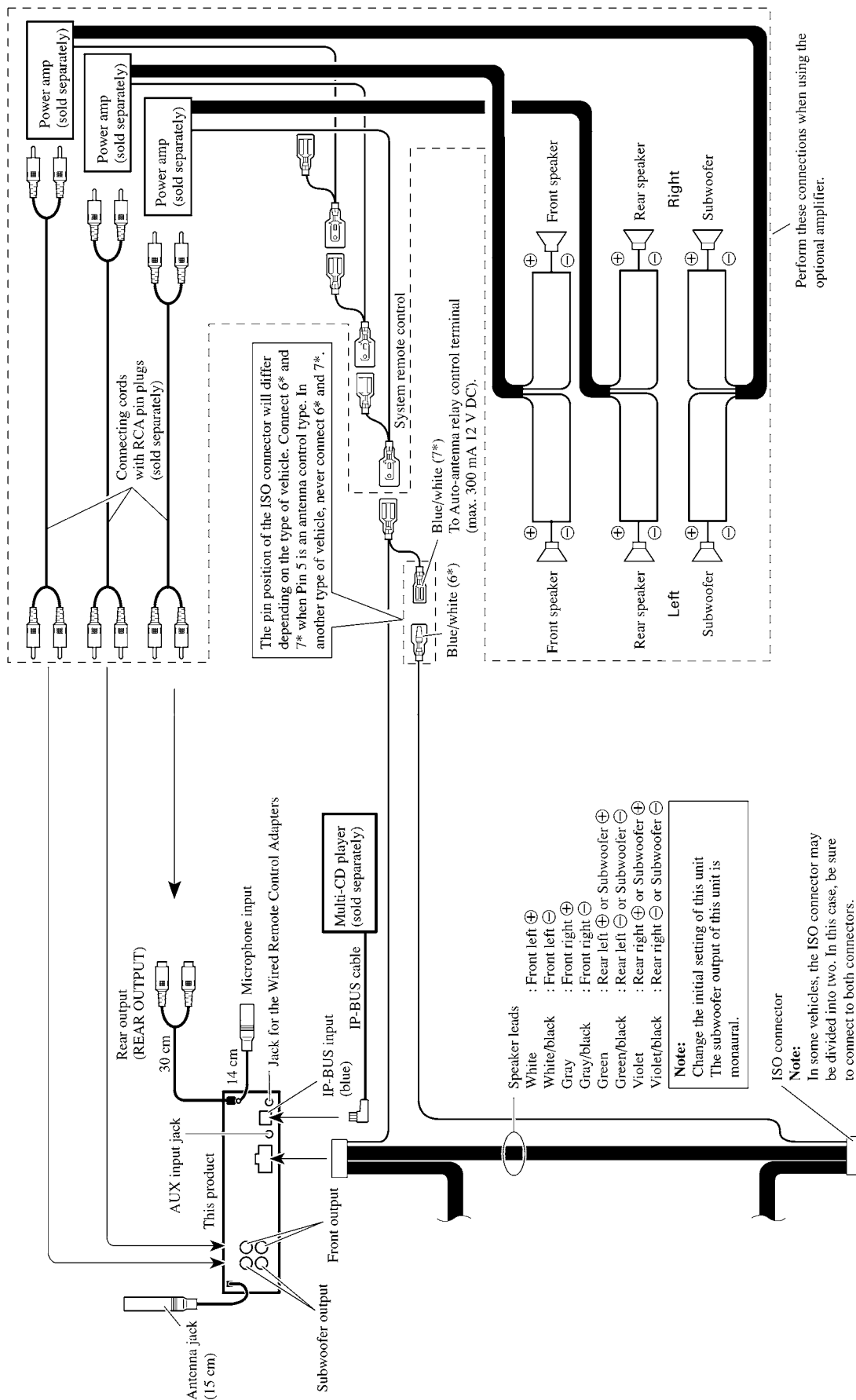
E

■

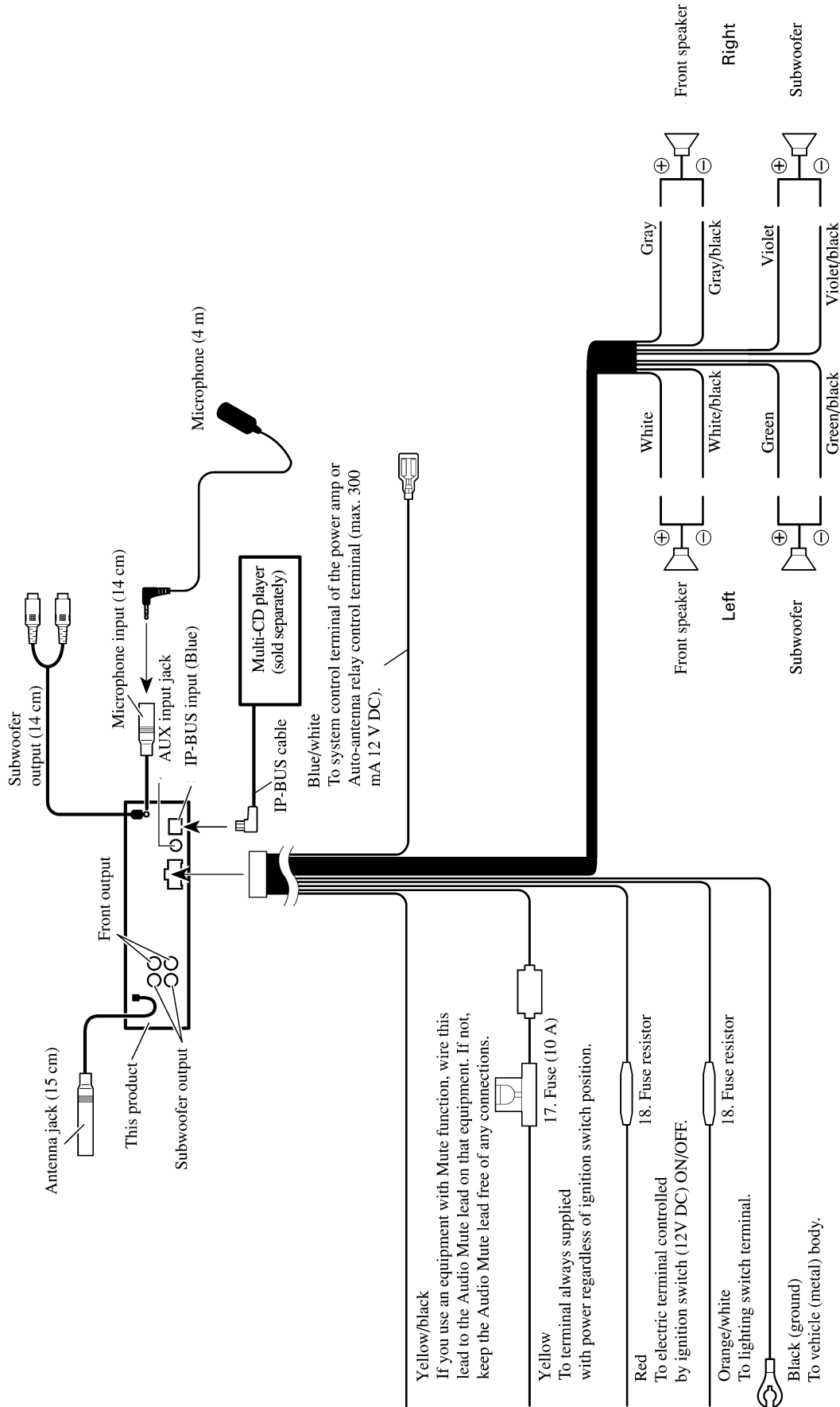
F

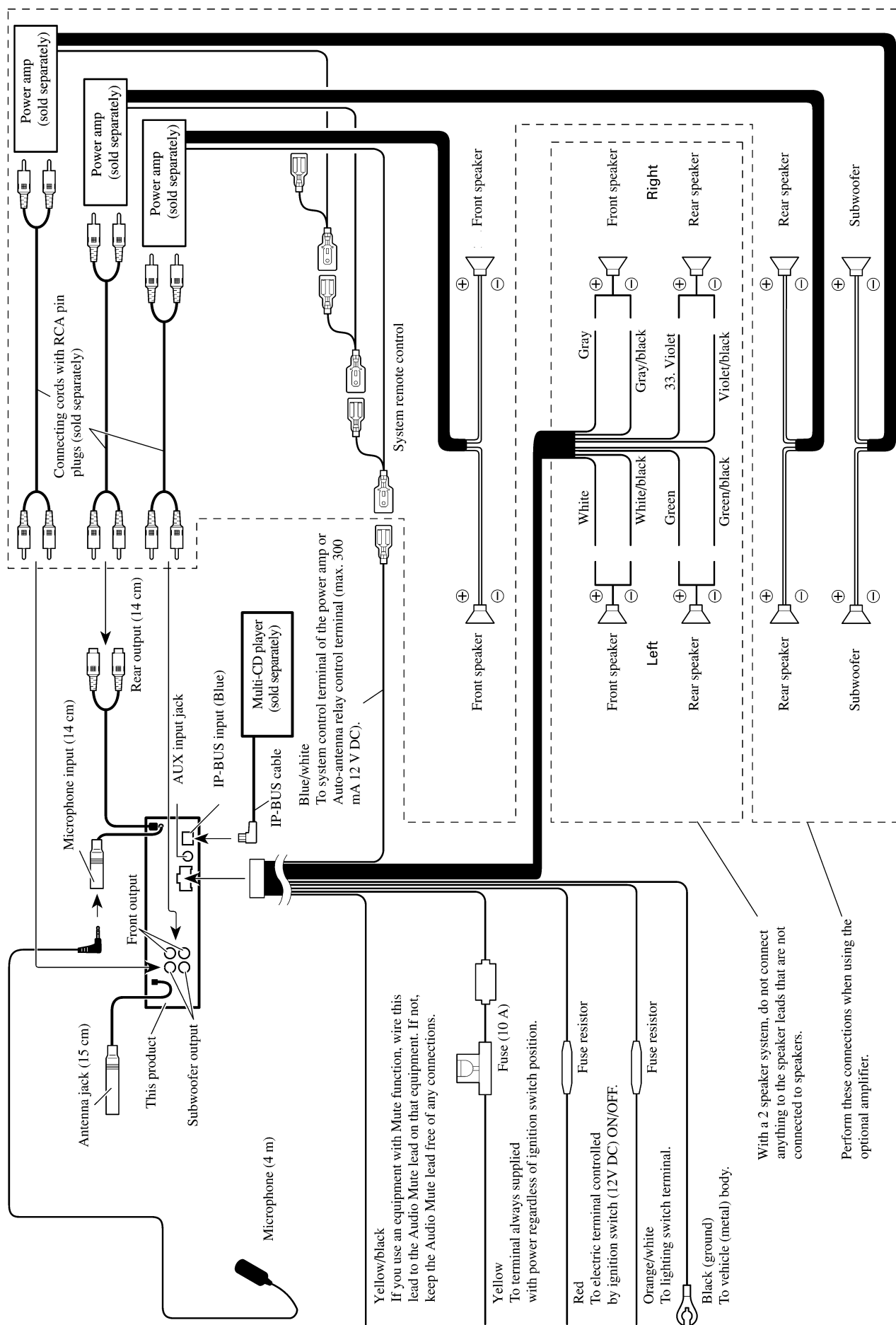
● Connection Diagram(DEH-P75BT/XN/EW5)





● Connection Diagram(DEH-P7850BT/XN/ES)





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DEH-P75BT/XN/EW5

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8

■

● Jigs List

Name	Jig No.	Remarks
Test Disc	TCD-782	Checking the grating
L.P.F.		Checking the grating (Two pieces)
	GGF1539	Removing the cord assy(BT antenna cable)

● Grease List

Name	Jig No.	Remarks
Grease	GEM1024	CD Mechanism Module
Grease	GEM1045	CD Mechanism Module



Before shipping out the product, be sure to clean the following portions by using the prescribed cleaning tools:

Portions to be cleaned	Cleaning tools
CD pickup lenses	Cleaning liquid : GEM1004 Cleaning paper : GED-008

Portions to be cleaned	Cleaning tools
Fans	Cleaning paper : GED-008

Service Manual

ORDER NO.
CRT3583

CD MECHANISM MODULE(S10.5COMP1)

CX-3164

This service manual describes the operation of the CD mechanism module incorporated in models listed in the table below.

When performing repairs use this manual together with the specific manual for model under repair.

Model	Service Manual	CD Mechanism Module
DEH-2800MP/XN/UC DEH-2850MP/XN/ES	CRT3554	CXK5752
DEH-2800MP/XN/EW DEH-2800MPB/XN/EW DEH-2820MP/XN/EW DEH-281MP/XN/EW	CRT3555	CXK5752
DEH-3850MP/XU/ES DEH-3850MPH/XU/GS DEH-3850MP/XU/CN	CRT3556	CXK5750
DEH-P3800MP/XU/UC	CRT3557	CXK5750
DEH-P4800MP/XU/EW	CRT3558	CXK5750
DEH-P580MP/XN/UC DEH-P5800MP/XN/UC	CRT3563	CXK5752
DEH-P6800MP/XN/EW	CRT3564	CXK5752
DEH-P5850MP/XN/ES DEH-P5850MPH/XN/GS	CRT3565	CXK5752
DEH-P480MP/XU/UC DEH-P4800MP/XU/UC	CRT3566	CXK5750
DEH-P4850MP/XU/ES DEH-P4850MPH/XU/GS DEH-P4850MP/XU/CN	CRT3567	CXK5750
DEH-P680MP/XN/UC DEH-P6800MP/XN/UC DEH-P6850MP/XN/ES	CRT3569	CXK5752

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1. CIRCUIT DESCRIPTIONS

UPD63763CGJ, multifunctional LSI used in this device, has built-in CD-ROM decoder and MP3/WMA decoder, as shown in Fig.1.0.1, as well as the conventional CD block, allowing to play CD-ROMs, in which MP3/WMA files are recorded, while the recent mainstay of the CD LSI is the LSI integrating the core DSP with DAC or RF amplifier, which are generally used as peripheral circuits.

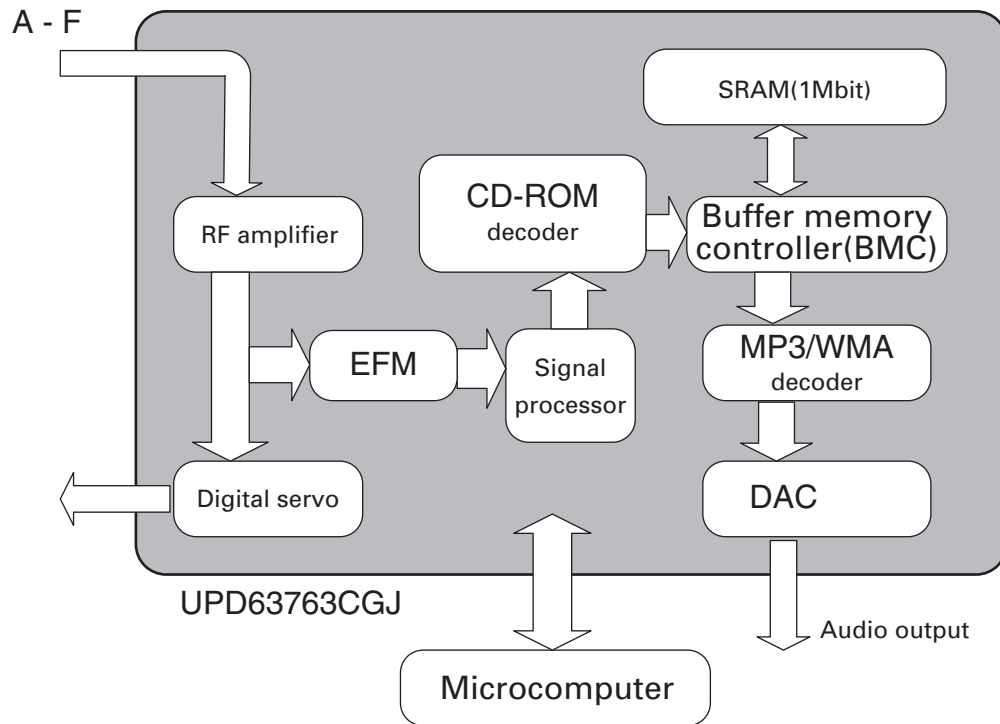


Fig.1.0.1 Block diagram of CD LSI UPD63763CGJ

1.1 PREAMPLIFIER BLOCK (UPD63763CGJ: IC201)

In the preamplifier block, the pickup output signals are processed to generate signals that are used in the subsequent blocks: servo, demodulator, and control blocks. Signals from the pickup are I/V converted in the pickup with the preamplifier with built-in photo detectors, and after added with the RF amplifier, they are used to produce such signals as RF, FE, TE, and TE zero-cross signals. The preamplifier block is built in CD LSI UPD63763CGJ (IC201), whose parts are described individually below. Incidentally, as this LSI employs a single power supply (+ 3.3 V) specification, the reference voltages of this LSI and the pickup are the REFO (1.65 V) for both. The REFO is an output obtained from REFOUT in the LSI via the buffer amplifier, and is output from the pin 133 of this LSI. All measurements will be performed with this REFO as the reference.

Caution: Be careful not to short-circuit the REFO and GND when measuring.

1.1.1 APC (Automatic Power Control) circuit

Since laser diodes have extremely negative temperature characteristics in optical output when driven in constant current, it is necessary to control the current with the monitor diodes in order to keep the output constant. This is the feature of the APC circuit. The LD current is obtained by measuring the voltage between LD1 and V3R3D(+ 3.3 V), and divide the value by 7.5 (ohms), which becomes about 30 mA.

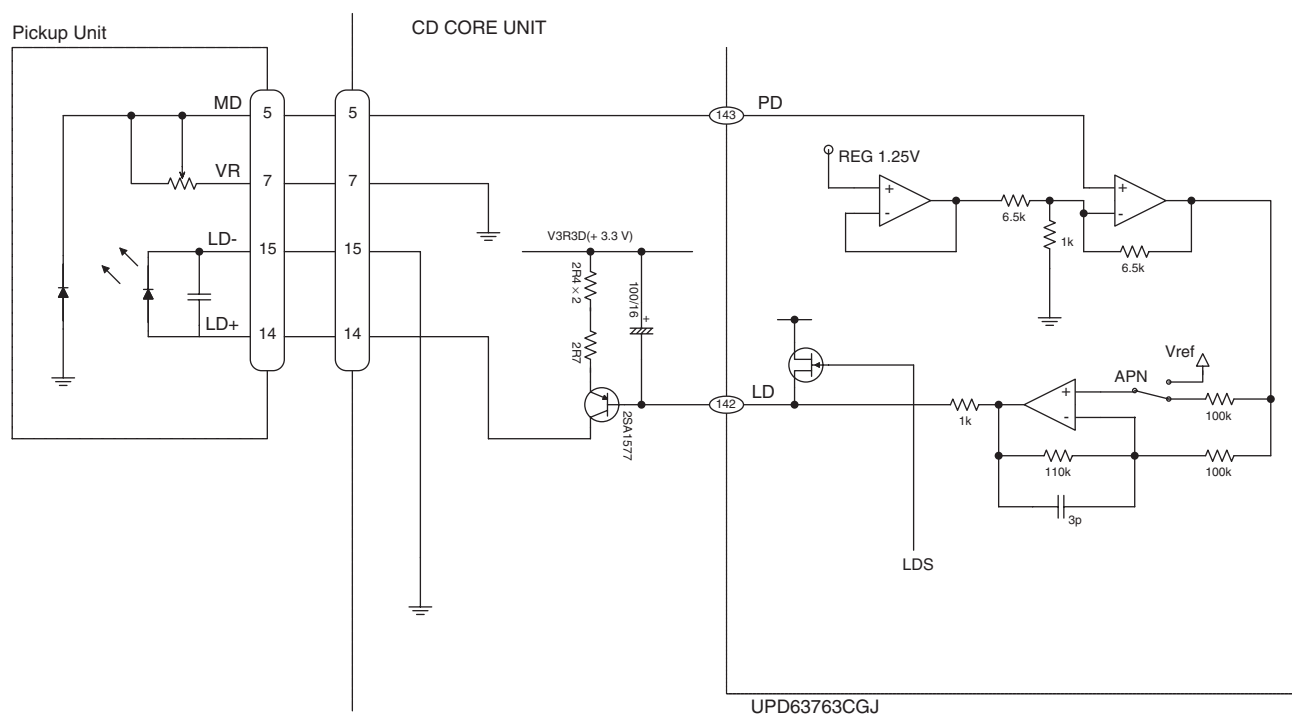


Fig.1.1.1 APC

1.1.2 RF and RFAGC amplifiers

The output from the photo-detector (A + C) and (B + D) is provided from the RFO terminal as the RF signal (which can be used for eye-pattern check), after it is added, amplified, and equalized inside this LSI. The low frequency component of the voltage RFO is calculated as below.

$$RFO = (A + B + C + D) \times 2$$

The RFO is used for the FOK generation circuit and RF offset adjustment circuit.

The RFO signal, output from the pin 119, is A/C-coupled externally, input to the pin 118, and amplified in the RFAGC amplifier to obtain the RFAGC signal.

Also, this LSI is equipped with the RFAGC auto-adjustment function, explained below, which switches feedback gains of the RFAGC amplifier so that the RFO output will be 1.5 V.

This RFO signal is also used for the EFM, DFCT, MIRR, and RFAGC auto-adjustment circuits.

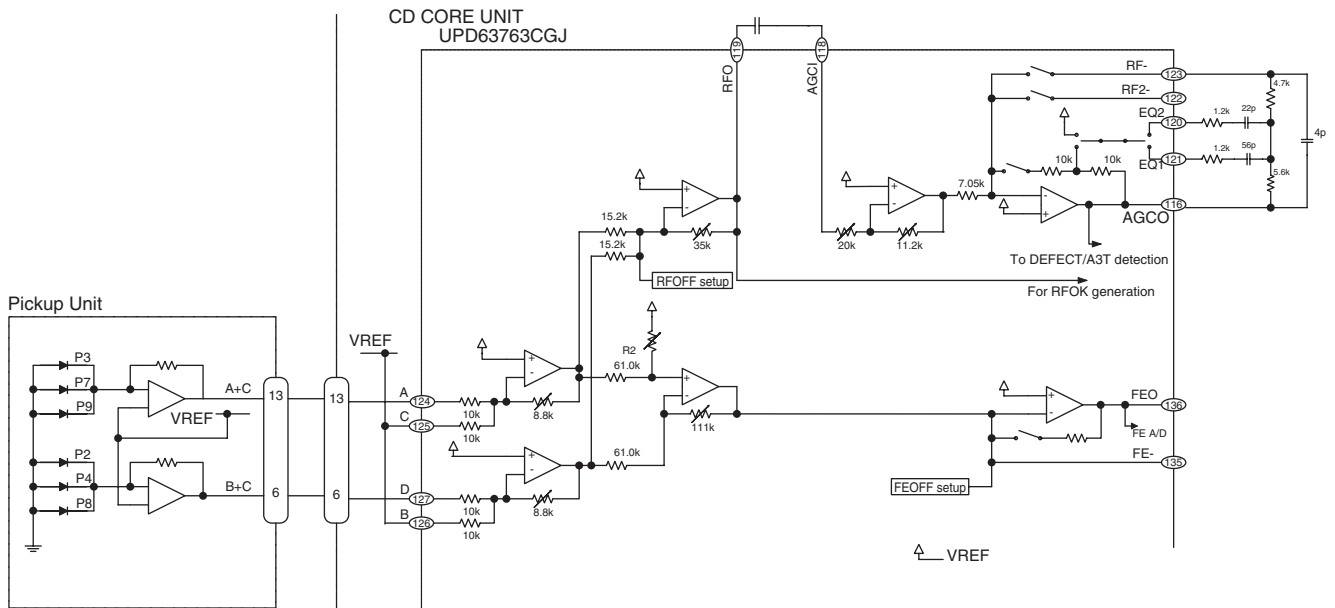


Fig.1.1.2 RF/AGC/FE

1.1.3 Focus error amplifier

The photo-detector outputs (A + C) and (B + D) are passed through the differential amplifier and the error amplifier, and (A + C - B - D) is provided from the pin 136 as the FE signal. The low frequency component of the voltage FE is calculated as below.

$$\begin{aligned} FE &= (A + C - B - D) \times 8.8k / 10k \times 111k / 61k \times 160k / 72k \\ &= (A + C - B - D) \times 3.5 \end{aligned}$$

For the FE outputs, an S-shaped curve of 1.5 Vp-p is obtained with the REFO as the reference. The cutoff frequency for the subsequent stage amplifiers is 14.6 kHz.

1.1.4 RFOK circuit

This circuit generates the RFOK signal, which indicates the timing to close the focus loop and focus-close status during the play mode, from the pin 55. As for the signal, "H" is output in closing the focus loop and during the play mode.

Additionally, the RFOK becomes "H" even in a non-pit area, since the DC level of the RFO signal is peak-held in the subsequent digital block and compared at a certain threshold level to generate the RFOK signal. Therefore, the focus is closed even on a mirror-surface area of a disc. This signal is also supplied to the microcomputer via the low-pass filter as the FOK signal, which is used for protection and gain switching of the RF amplifier.

1.1.5 Tracking error amplifier

The photo-detector outputs E and F are passed through the differential amplifier and the error amplifier to obtain (E - F), and then provided from the pin 139 as the TE signal. The low frequency component of the voltage TE is calculated as below.

$$\begin{aligned} TEO &= (E - F) \times 63k / 112k \times 160k / 160k \times 181k / 45.4k \times 160k / 80k \\ &= (E - F) \times 4.48 \end{aligned}$$

For the TE output, TE waveform of about 1.3 Vp-p with the REFO as the reference. The cutoff frequency in the subsequent is 21.1 kHz.

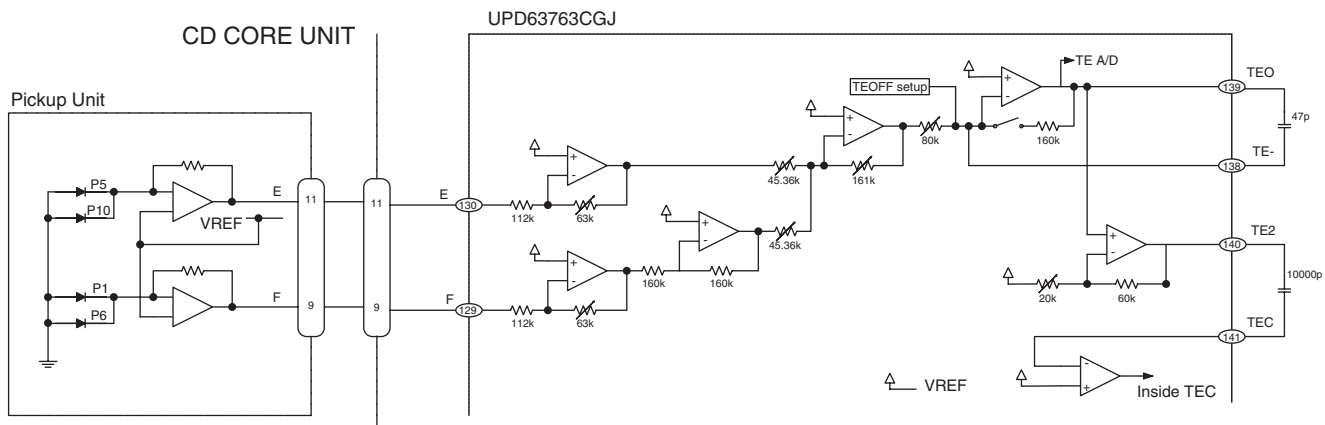


Fig.1.1.3 TE

1.1.6 Tracking zero-cross amplifier

The tracking zero-cross signal (hereinafter referred to as TEC signal) is obtained by amplifying the TE signal by fourfold, and used to detect the tracking-error zero-cross point. As the purpose of detecting the zero-cross point, the following two points can be named:

1. To use for track-counting in the carriage move and track jump modes
2. To use for detecting the direction in which the lens moves in tracking close. (Used in the tracking brake circuit to be explained later.)

The frequency range of the TEC signal is from 300 Hz to 20 kHz, and

TEC voltage = TE level x 4

The TEC level can be calculated at 4.62 V, which, at this level, exceeds the D range of the operational amplifier, and clips the signal, but, because the CD LSI only uses the signal at the zero-cross point, it poses no particular problem.

1.1.7 EFM circuit

The EFM circuit converts the RF signal into digital signals of 0 and 1. The AGCO signal output from the pin 116 is A/C-coupled externally, input to the pin 114, and supplied to the EFM circuit.

Missing RF signal due to scratches and stains on the disc, and asymmetry of the upper and lower parts of the RF, caused by variation in disc production, cannot be entirely eliminated in AC coupling process, the reference voltage ASY of the EFM comparator is controlled, using the probability that 0 and 1 occur at 50%. Thus, the comparator level will always stay around the center of the RFO signal. This reference voltage ASY is generated by passing the EFM comparator output through the low-pass filter. The EFM signal is output from the pin 111.

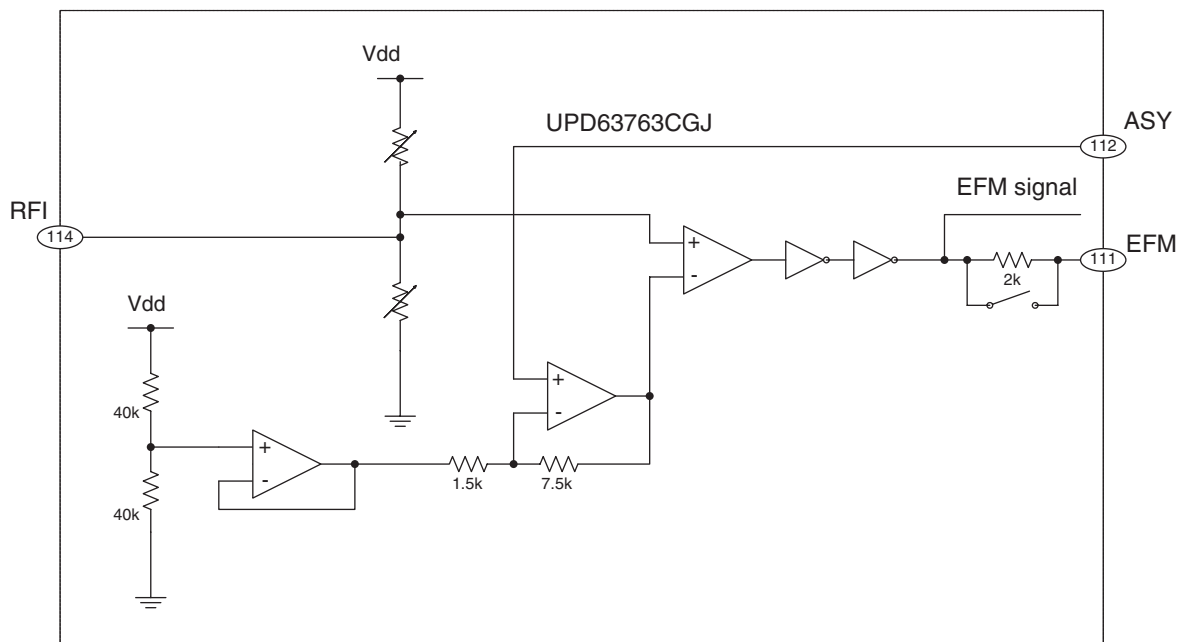


Fig.1.1.4 EFM

1.2 SERVO BLOCK (UPD63763CGJ: IC201)

The servo block performs servo control such as error signal equalizing, in-focus, track jump and carriage move. The DSP block is the signal-processing unit, where data decoding, error correction, and compensation are performed. The FE and TE signals, generated in the preamplifier stage, are A/D-converted, and output drive signals for the focus, tracking, and carriage systems via the servo block. Also, the EFM signal is decoded in the signal-processing unit, and ends up in outputting D/A-converted audio signals through the D/A converter. Furthermore, in this decoding process, the spindle servo error signal is generated, supplied to the spindle servo block, and used to output the spindle drive signal.

Each drive signal for focus, tracking, carriage, and spindle servos (FD, TD, SD, and MD) are output as PWM3 data, and then converted to analog data through the LPF. These drive signals, after changed to analog form, can be monitored with the FIN, TIN, CIN, and SIN signals, respectively. Subsequently, the signals are amplified and supplied to the actuator and motor for each signal.

1.2.1 Focus servo system

The main equalizer of the focus servo consists of the digital equalizer block. The figure 1.2.1 shows the block diagram of the focus servo system.

In the focus servo system, it is necessary to move the lens within the in-focus range in order to close the focus loop. For that purpose, the in-focus point is looked for by moving the lens up and down with the focus search voltage of triangular signal. During this time, the rotation of the spindle motor is retained at a certain set speed by kicking the spindle motor.

The servo LSI monitors the FE and RFOK signals and automatically performs the focus-close operations at an appropriate timing. The focus-close operation is performed when the following three conditions are satisfied at the same time:

- 1) The lens moves toward the disc surface.
- 2) RFOK = "H"
- 3) The FE signal is zero-crossed.

Consequently, the FE converges to "0" (= REFO).

When the above-mentioned conditions are met and the focus loop is closed, the FSS bit is shifted from "H" to "L," and then, in 10 ms, the microcomputer starts monitoring the RFOK signal obtained through the low-pass filter.

If the RFOK signal is determined to be "L," the microcomputer takes several actions including protection.

Fig.1.2.2 shows a series of actions concerning the focus close operations. (It shows a case where the focus loop cannot be closed.)

With the focus mode selector displaying 01 in the test mode, pressing the focus close button, allows to check the S-shaped curve, search voltage, and actual lens behavior.

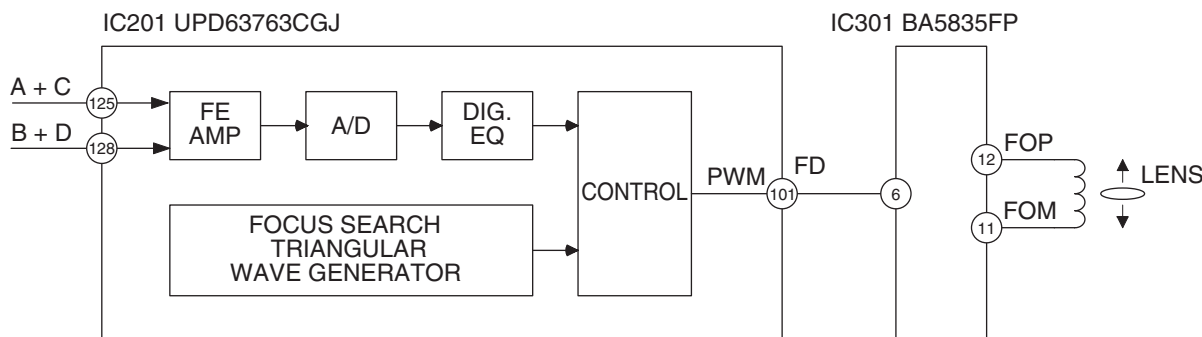


Fig.1.2.1 Block diagram of the focus servo system

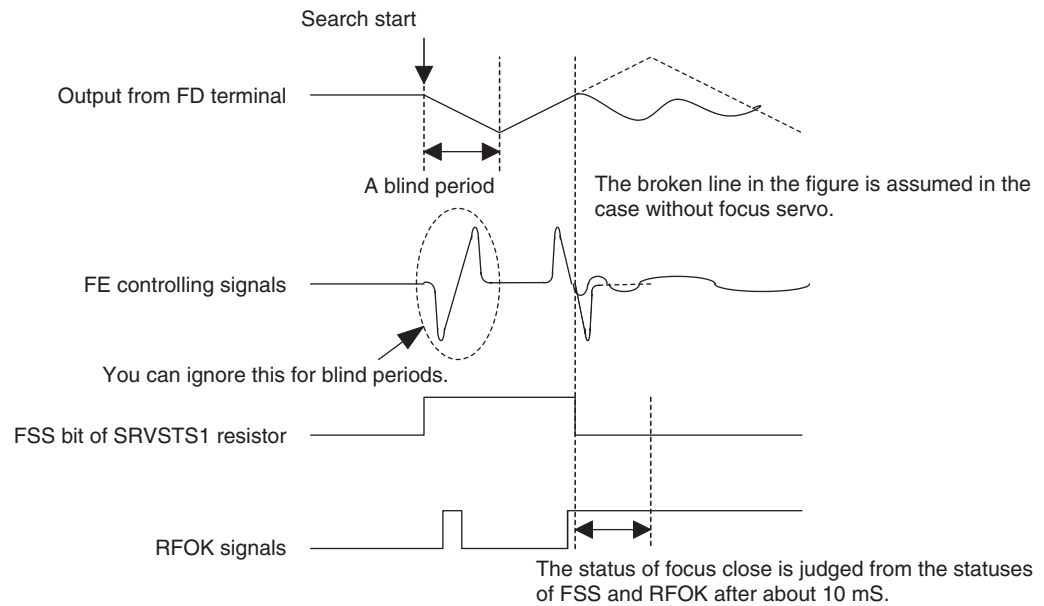


Fig.1.2.2 Timing chart for focus close operations

1.2.2 Tracking servo system

The main equalizer of the tracking servo consists of the digital equalizer block. The figure 1.2.3 shows the block diagram of the tracking servo system.

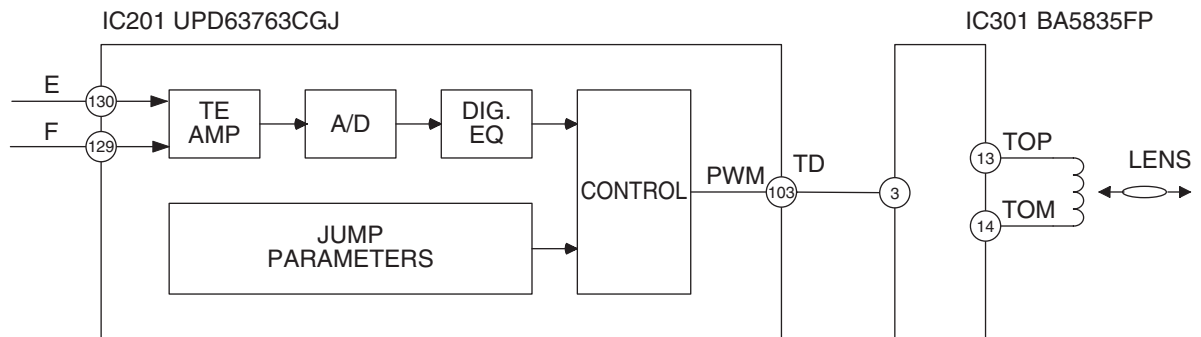


Fig.1.2.3 Block diagram of the tracking servo system

(a) The track jump operation is automatically performed by the auto-sequence function inside the LSI with a command from the microcomputer. For the track jumps used in the search mode, a single track jump and four to 100 multi-track jump are available in this system. In the test mode, out of these track jumps, 1, 32, and 32×3 track jumps, as well as carriage move can be performed and checked in mode selection. In a track jump, the microcomputer sets about half the number of the total tracks to jump (about five tracks for a 10-track jump), and the set number of tracks are counted using the TEC signal. By outputting the brake pulse for a certain period of time (set by the microcomputer) from the time the set number is counted, and stopping the lens, the tracking loop can be closed so that the normal play can be continued.

Also, in order to facilitate closing of the tracking loop in a track jump, the brake circuit is kept ON for 50 msec, after the brake pulse is stopped, for increasing the tracking servo gain. The FF/REW action in the normal operation mode is realized by performing single jumps consecutively. The speed is approximately 10 times faster than in the normal mode.

(b) Brake circuit

Since the servo loop is not closed very well in the setup mode and track jump mode, the brake circuit is used for stabilizing the servo-loop close operation. The brake circuit detects the direction in which the lens moves, and outputs only the drive signal for the direction opposite to the movement to slow down the lens, thereby stabilizing the tracking servo-loop close operation. Additionally, the off-track direction is determined from the TEC and MIRR signals, as well as their phase relation.

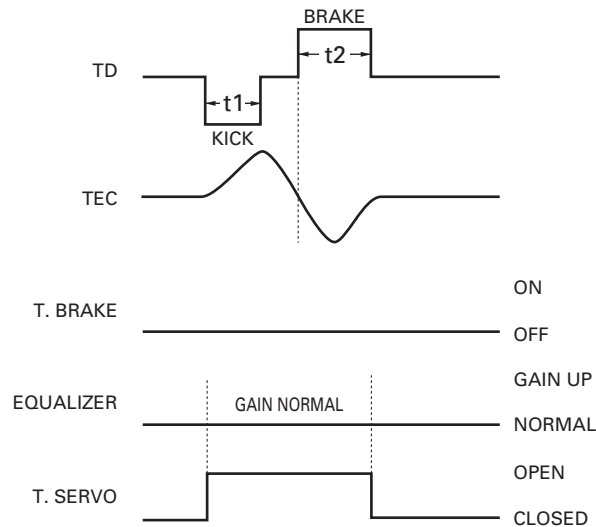


Fig.1.2.4 Single-track jump

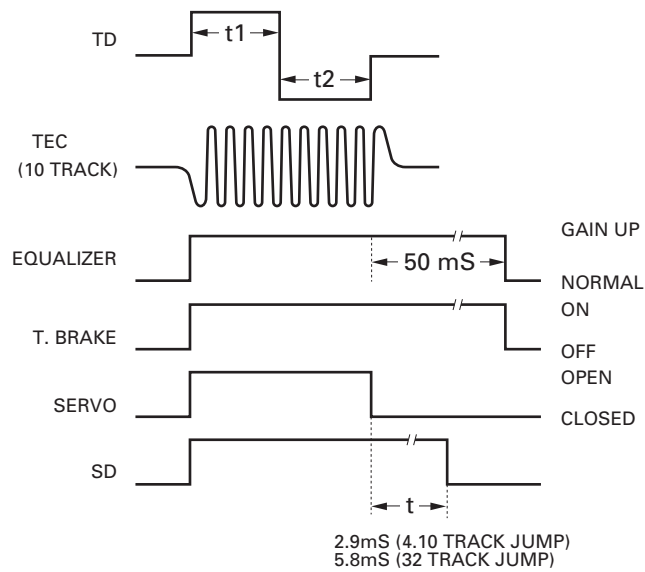
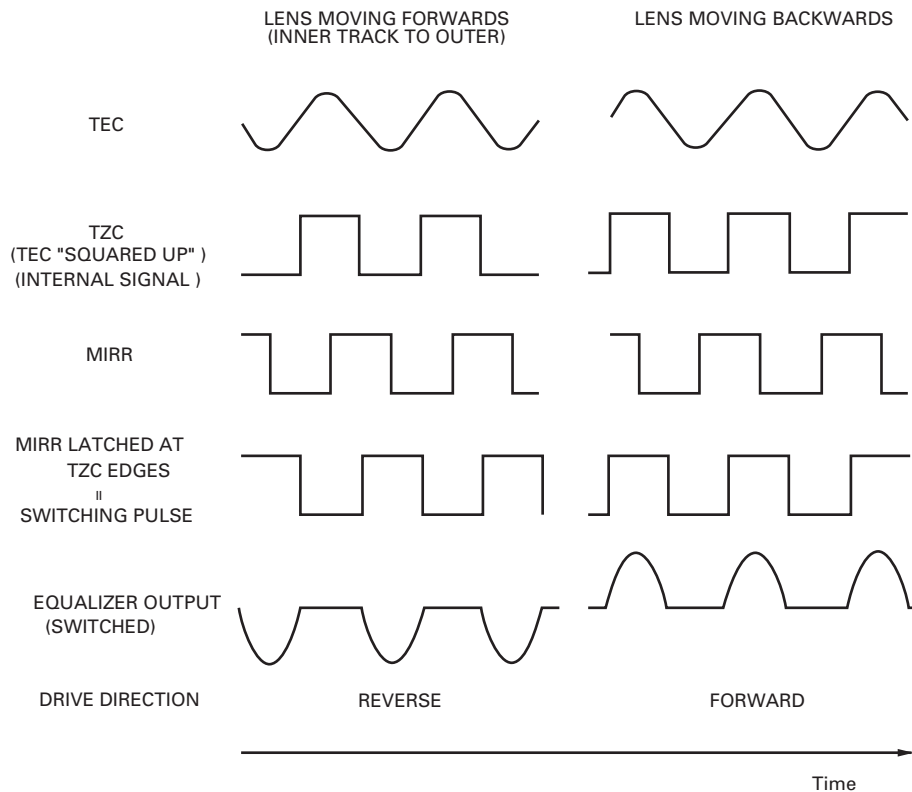


Fig.1.2.5 Multi-track jump



Note : Equalizer output assumed to have same phase as TEC.

Fig.1.2.6 Track brake

1.2.3 Carriage servo system

The carriage servo system inputs the output of the low frequency component from the tracking equalizer (information on the lens position) to the carriage equalizer, and, after the gain is increased to a certain level, outputs the drive signal from the LSI. This signal is applied to the carriage motor via the driver IC.

Specifically, since it is necessary to move the whole pickup to the FORWARD direction when the lens offset reaches a certain level during the play mode, the equalizer gain is set to output higher voltage than the carriage motor starting voltage at this time. In actual operations, a certain threshold level is preset in the servo LSI for the equalizer output, and only when it exceeds the threshold level, the drive voltage will be output. This can reduce the power consumption. Also, before the whole pickup starts moving, the equalizer output voltage may exceed the threshold level a few times, due to such causes as eccentricity of discs. In this case, the output waveform of the drive voltage from the LSI assumes a pulse-like form.

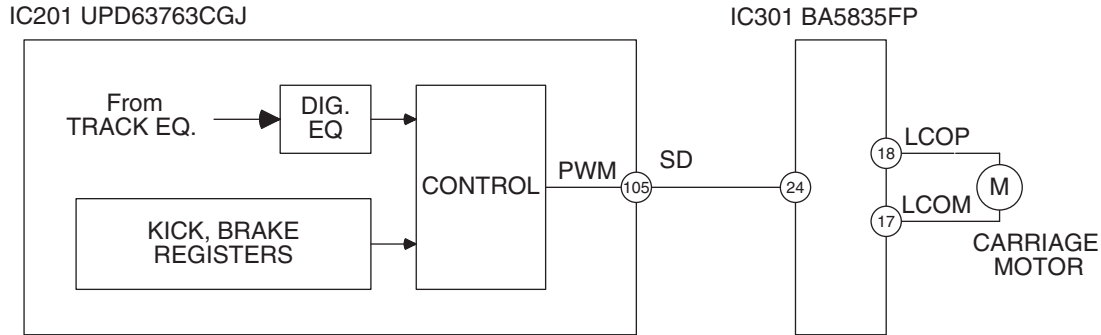


Fig.1.2.7 Block diagram for the carriage servo block

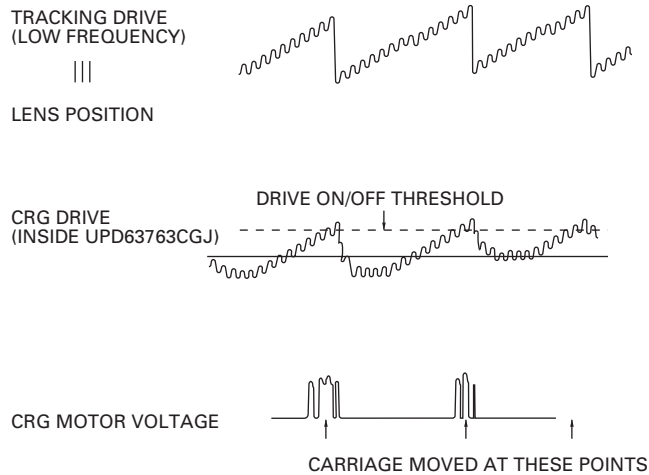


Fig.1.2.8 Waveforms of the carriage signal

1.2.4 Spindle servo system

In the spindle servo system, the following modes are available:

1) Kick

Used to accelerate the disc rotation in the setup mode.

2) Offset

a. Used in the setup mode after the kick mode, until the TBAL adjustment is completed.

b. Used during the play mode when the focus loop is unlocked, until it is locked again.

In both cases, the mode is used to keep the disc rotation approximately normal.

3) Applicable servo

CLV servo mode, used in the normal operation.

In the EFM demodulation block, by WFMCK/16 sampling whether the frame sync signal and the internal frame counter output are synchronized, a signal is created to show if they are "in-sync" or "non-sync." The status is not recognized as asynchronous until the signal is "non-sync" for eight consecutive times; otherwise it is recognized as synchronous. In the applicable servo mode, the leading-in servo mode is automatically selected in the asynchronous status, and the normal servo mode in the synchronous status.

4) Brake

Used to stop the spindle motor.

In accordance with the microcomputer's command, the brake voltage is sent out from the servo LSI. At this time, the EFM waveform is monitored in the LSI, and when the longest EFM pattern exceeds a certain interval (or the rotation slows down enough), a flag is set inside the LSI, and the microcomputer switches off the brake voltage. If a flag is not set within a certain period, the microcomputer shifts the mode from the brake mode to the stop mode, and retains the mode for a certain period of time. If the mode switches to this stop mode in the eject operation, the disc will be ejected after the period of time mentioned above elapses.

5) Stop

Used when the power is turned on and during the eject operation. In the stop mode, the voltage in both ends of the spindle motor is 0 V.

6) Rough servo

Used in carriage feed (carriage move mode such as long search).

By obtaining the linear velocity from the EFM waveform, the "H" or "L" level is input to the spindle equalizer. In the test mode, this mode is also used for grating confirmation.

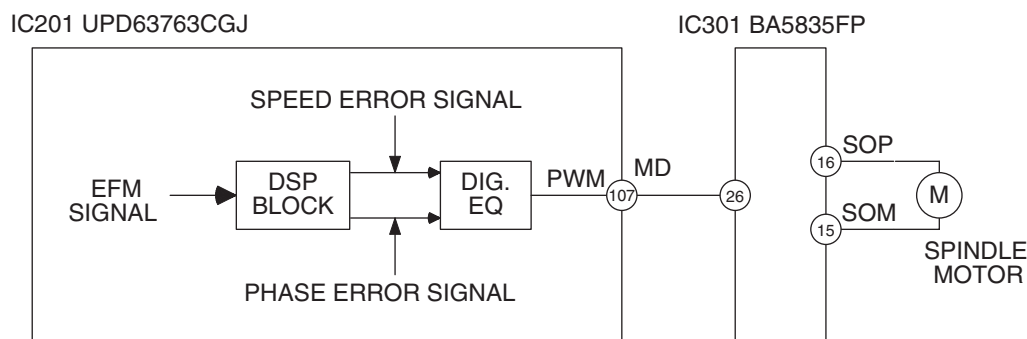


Fig.1.2.9 Block diagram of the spindle servo system

1.3 AUTOMATIC ADJUSTMENT FUNCTION

In this system, all the circuit adjustments are automated inside the CD LSI.

All adjustments are performed whenever a disc is inserted or the CD mode is selected by pressing the source key.

Details of each adjustment will be explained below.

1.3.1 TE, FE, and RF offset auto-adjustment

In this adjustment the TE, FE, and RF amplifier offsets of the preamplifier block in POWER ON are adjusted to the respective target values with the REFO as reference. (The target values for TE, FE, and RF offsets are 0 V, 0 V, and - 0.8 V, respectively.)

Adjusting procedure

1) The microcomputer reads respective offsets through the servo LSI, when they are in LDOFF status.

2) The microcomputer calculates the voltages for correction from the values read in 1), and substitutes the corrected values to prescribed places to adjust.

1.3.2 Tracking balance (T.BAL) auto-adjustment

This adjustment equalizes the output difference of the E-ch and F-ch from the pickup by changing the amplifier gain inside the LSI. In actual operation, adjustment is performed so that the TE waveform becomes symmetrical on each side of the REFO.

Adjusting procedure

1) After closing the focus loop,

2) Kick the lens in the radial direction to ensure the generation of the TE waveform.

3) The microcomputer reads the offset amount of the TE signal calculated in the LSI at the time through the servo LSI.

4) The microcomputer determines the offset amount is 0, positive, or negative.

- When the offset amount is 0, the adjustment is completed.

- When the offset amount is positive or negative, the amp gains for E-ch and F-ch should be changed, following a certain rule.

Then, steps 2) to 4) are repeated until the offset amount becomes 0 or the repetition reaches the limit number of times.

1.3.3 FE bias auto-adjustment

This adjustment is to maximize the RFO level by optimizing the focus point during the play mode, utilizing the phase difference between the 3T level waveform of the RF waveform and that of when focus error disturbance is input. This adjustment is performed at the same timing as the auto-gain control, which will be described later, since disturbance is input to the focus loop.

Adjusting procedure

1) The microcomputer issues the command to introduce disturbance to the focus loop (inside the servo LSI).

2) The waver of the 3T component of the RF signal is detected in the LSI.

3) The relation between the 3T component above and the disturbance is processed inside the LSI to detect the volume and direction of the focus offset.

4) The microcomputer issues a command and reads out the detected results from the servo LSI.

5) The microcomputer calculates the necessary correction and substitutes the result to the bias adjustment term inside the servo LSI.

Additionally, in this adjusting, a series of steps are repeated for better adjustment accuracy, the same as in the auto-gain control.

1.3.4 Focus and tracking AGC

This adjustment is to automatically adjust the focus and tracking servo loop gains.

Adjusting procedure

- 1) Introduce disturbance to the servo loop.
 - 2) The error signals (FE and TE) when disturbance is introduced are extracted through the band pass filter, to obtain the G1 and G2 signals.
 - 3) The microcomputer reads the G1 and G2 signals through the servo LSI.
 - 4) The microcomputer calculates the necessary correction and performs the loop gain adjustment inside the servo LSI.
- For increased adjustment accuracy, the same adjustment process is repeated a few times.

1.3.5 RF level auto-adjustment (RFAGC)

This adjustment is to adjust the dispersion of the RF level (RFO), which may be caused by mechanism or disc-related factors, to a steady value for reliable signal transmission. The adjustment is performed by changing the amp gain between RFO and RFAGC.

Adjusting procedure

- 1) The microcomputer issues a command and reads out the output from the RF level detection circuit inside the servo LSI.
- 2) From the read values, the microcomputer calculates the amp gain to change the RFAGC level to the target.
- 3) The microcomputer sends a command to the servo LSI to adjust the amp gain to the level calculated in 2).

This adjustment is performed

- 1) when only the focus close operation is completed during the setup mode, and
- 2) immediately before the setup is completed (or when the play mode is about to start).

1.3.6 Adjustment of gains in preamplifier stage

In this adjustment, when reflected beams from the disc surface are extremely weak, such as when the lens is dirty, or a CD-RW is played, gains in the whole RFAMP block (FE, TE, and RF amplifiers) are increased by + 6 dB or + 12 dB, depending on the situation.

Adjusting procedure

When the system determines that the reflected beams from the disc surface are extremely weak during the setup mode, the whole RFAMP gains will be increased by + 6 dB or + 12 dB.

1.3.7 Initial values in adjustment

All automatic adjustments immediately after inserting a disc are performed based on the initial values. Automatic adjustments by source change or ACC ON are basically performed using the previous adjustment values as the initial values.

1.3.8 Coefficient display of adjustment results

For some of the adjustments (FE and RF offset, FZD cancel, F and T gains, and RFAGC), the adjustment results can be displayed and confirmed in the test mode.

The coefficient display in each auto adjustment is as follows:

1) FE and RF offset

Reference value = 32 (coefficient of 32 indicates that no adjustment is required)

The value is displayed in the unit of approximately 32mV.

Ex. When the FE offset coefficient is 35,

$$35 - 32 = 3 \times 32 \text{ mV} = 96 \text{ mV}$$

The correction is about +96 mV, which means the FE offset before adjustment is - 96 mV.

2) F and T gain adjustment

Reference value for focus and tracking = 20

The displayed coefficient / the reference value indicates the adjusted gain.

Ex. When the AGC coefficient is 40,

adjustment of $40 / 20 = 2$ times (+ 6 dB) has been performed.

(It means that the original loop gain was half the target, and the whole gain was doubled to obtain the target value.)

3) RF level adjustment (RFAGC)

Reference value = 8

The coefficient of 9 to 15 indicates to increase the RF level
(for more gains).

The coefficient of 7 to 10 indicates to decrease the RF level
(for less gains).

When the coefficient changes by 1, the gain changes by 0.7 to 1 dB.

When the coefficient is 15, the gain is the maximum at TYP + 7.9 dB.

When the coefficient is 0, the gain is the minimum at TYP - 4.6 dB.

1.4 POWER SUPPLY AND LOADING BLOCK

For the power supply for this system, the VD (7.5 ± 0.5 V) and the VDD (5.0 ± 0.25 V), which are supplied from the motherboard, are used. The three power supplies, the VD mentioned above (for the drive system), the V3R3D obtained from the VD via the 3.3 V regulator (for the control system: 3.3 V) and the VDD (for the microcomputer: 5 V), are used in this system.

The microcomputer controls ON/OFF with "CONT", except for Load/Eject of the CD driver, and ON/OFF of 3.3 V with "CD3VON". For ON/OFF of the Loading drive, no particular control terminals are available, but the input signal "LOEJ" assumes an equivalent role. Also, the LCO output switches LOADING MODE and CARRIAGE MODE with "CLCONT".

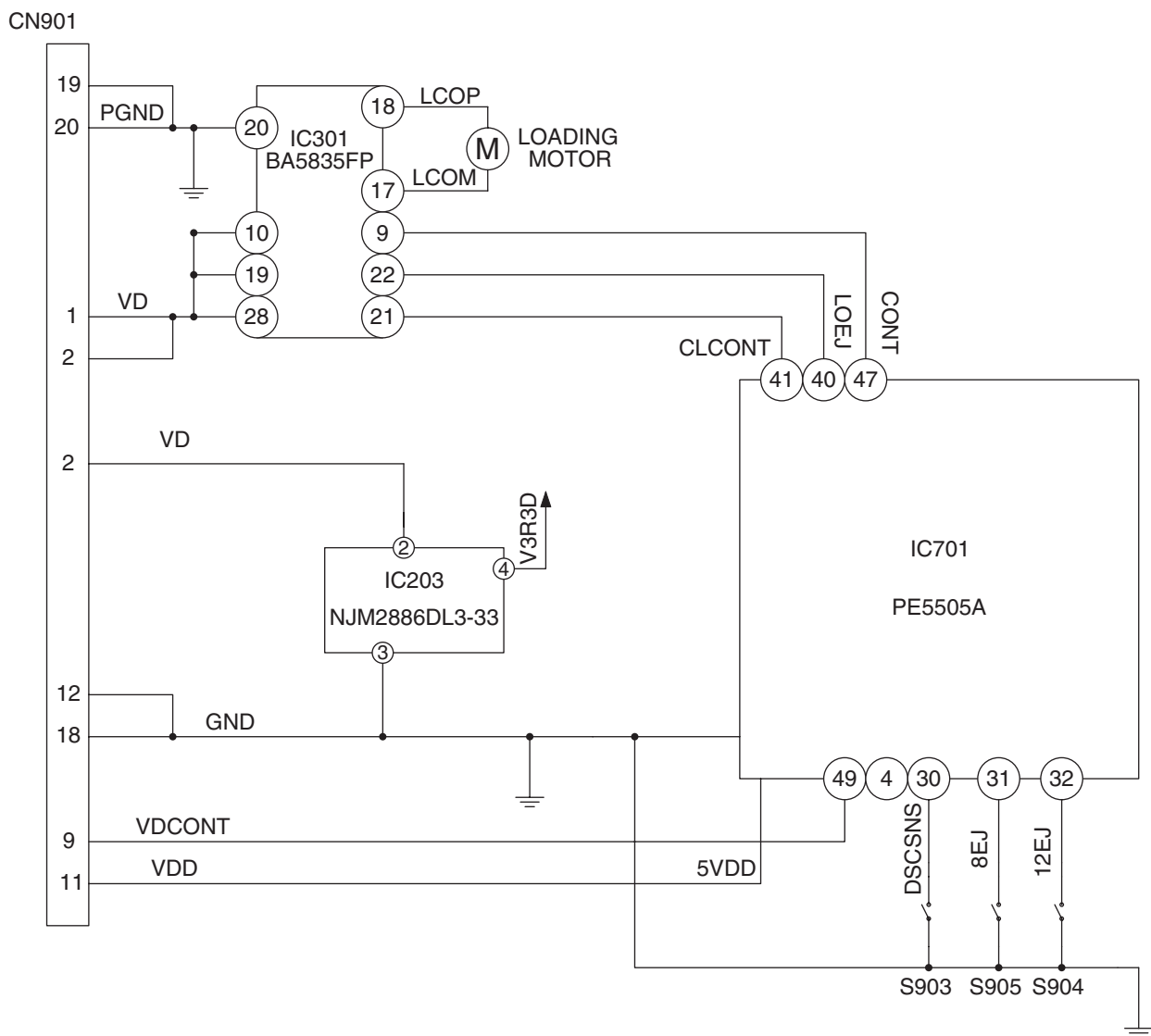


Fig.1.4.1 Power supply/loading system circuit block

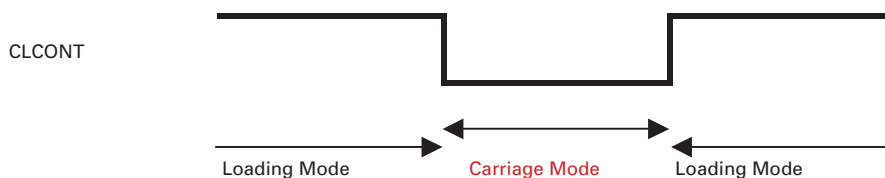


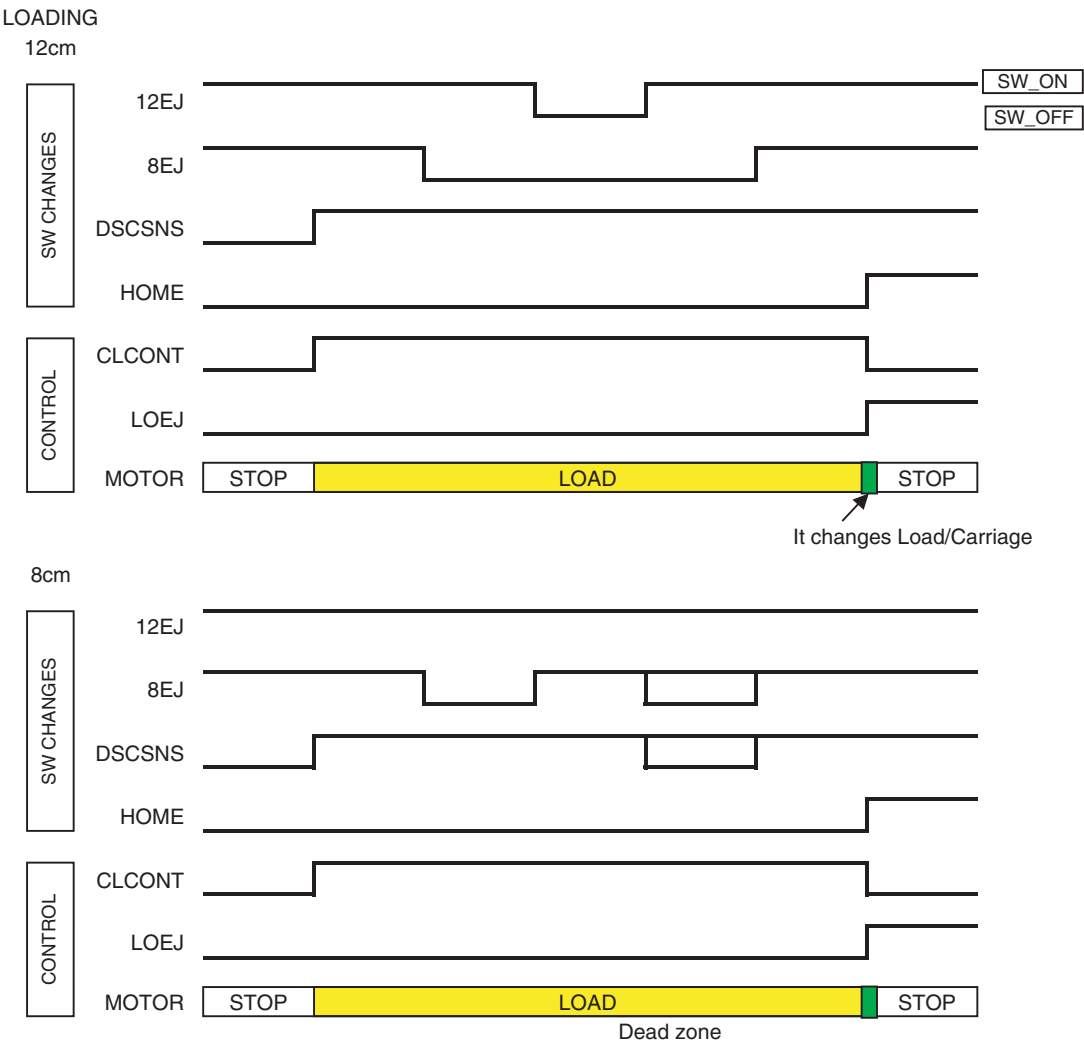
Fig.1.4.2 Loading/carriage mode shift

The load/eject operation is controlled with the status changes of the HOME switch (also used for clamp detection) on the mechanism unit and the three switches on the control unit. The ON/OFF statuses of these switches are respectively detected at the input port of the microcomputer.

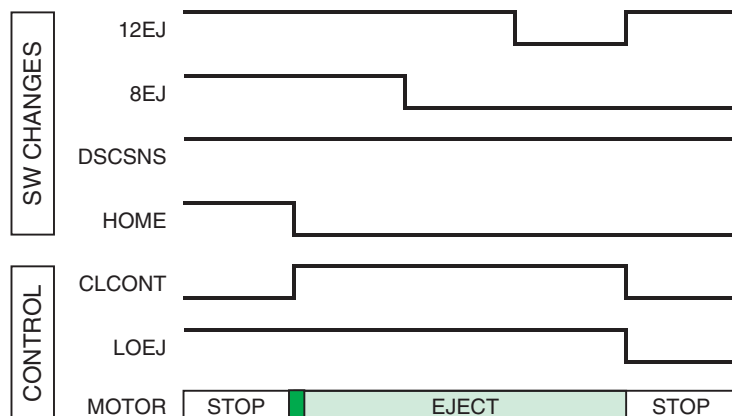
Using the detection results in the microcomputer, each status (A to E) is determined. The disc size detection (8 or 12 cm) is also performed through this status change. Each status is shown in Fig.1.4.3 and the status change in Fig.1.4.4.

Status	A	B	C	D	E
DSCSNS	SW1(S903)	ON	ON	ON	ON
8SW	SW2(S905)	ON	OFF	OFF	ON
12SW	SW3(S904)	ON	ON	OFF	ON
HOME	SW4(S901)	OFF	OFF	OFF	ON
Mechanism state	With no disc				Clamp state

Fig.1.4.3 DSCSNS status



EJECT
12cm



8cm

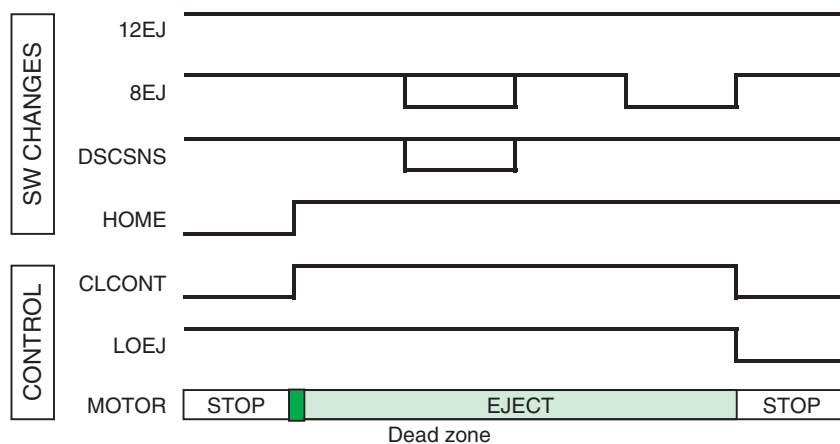
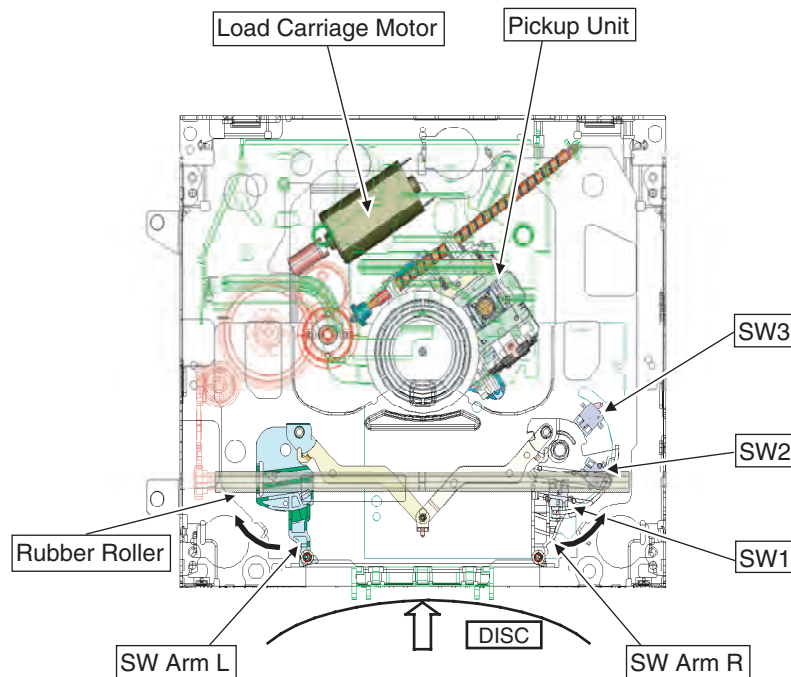


Fig.1.4.4 Status change in LOAD and EJECT modes

2. MECHANISM DESCRIPTIONS

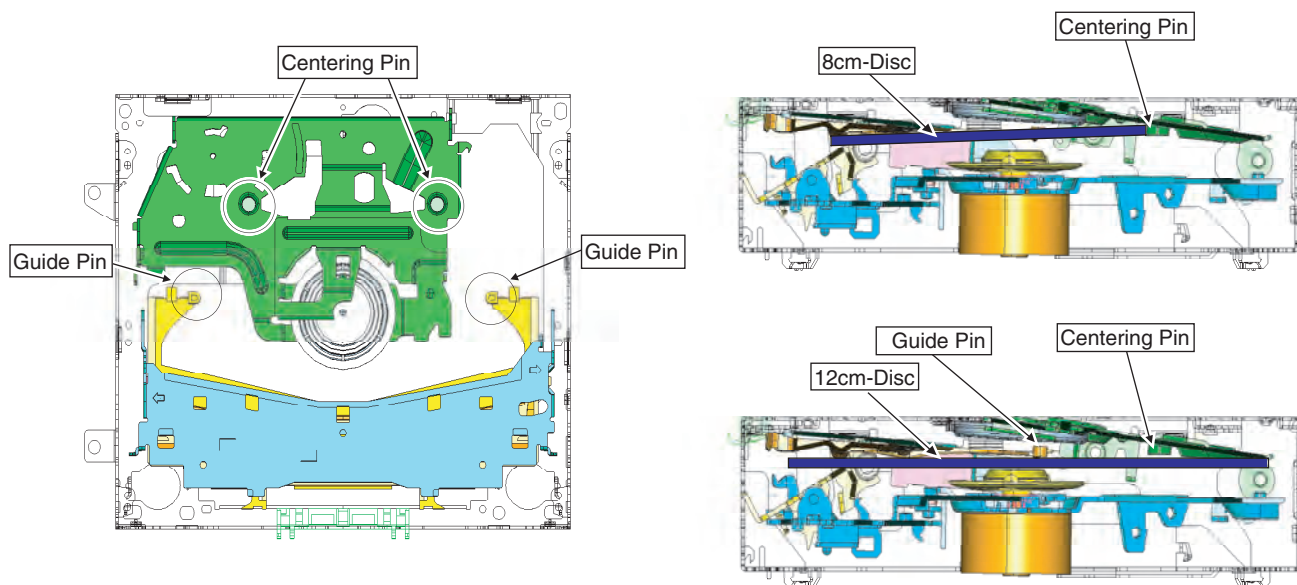
● Loading actions

1. When a disc is inserted, SW Arm L and R rotate and SW1 is switched from ON to OFF.
When SW1 is switched from ON to OFF, the Load Carriage Motor is started and the rubber roller rotates.
2. If the disc is a 12cm-disc, SW3 is turned ON with SW Arm, and the microcomputer determines that the disc is a 12cm-disc.
3. In case of an 8cm-disc, SW3 is not turned ON, a clamp action is triggered, and the microcomputer determines that the disc is an 8cm-disc.
(The left and right of SW Arm are coupled, and when only one side is pushed, the coupled joint will lock, and the arms will not open more than a certain width (SW3 will not be turned ON).)



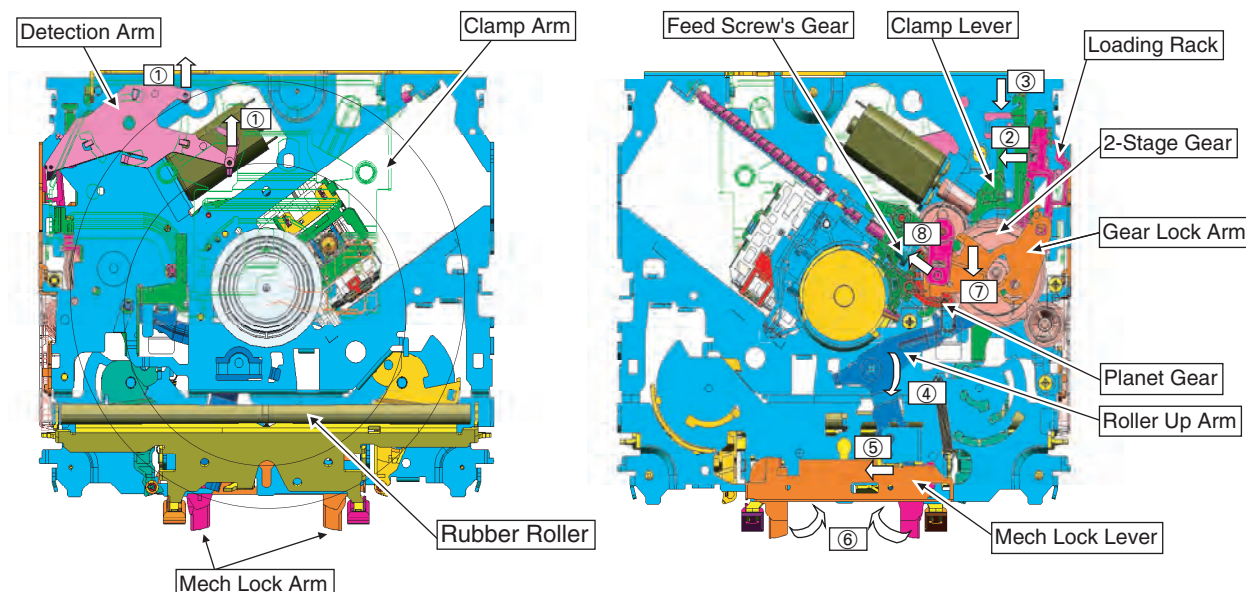
● Disc centering mechanism

1. 8cm-disc is centered by the Guide Pins and the Centering Pins.
2. 12cm-disc passes under the Guide Pins and the Centering Pins, and centered in the back position of the mechanism.



● Clamp actions mechanism

1. With an 8 or 12cm-disc centered on the spindle, the Detection Arm is moved.
 2. The movement of the Detection Arm engages the Loading Rack with the 2-Stage Gear.
 3. The Clamp Lever slides and lowers the Clamp Arm (the disc is clamped).
At the same time, the Roller Up Arm is rotated, and the Rubber Roller is separated from the disc.
 4. When the clamp action is completed, the Clamp Lever rotates the Gear Lock Arm.
- When the arm is rotated, the Planet Gear is separated from the 2-Stage Gear and engaged with the gear of the pickup feed screw, and the carriage operation will start



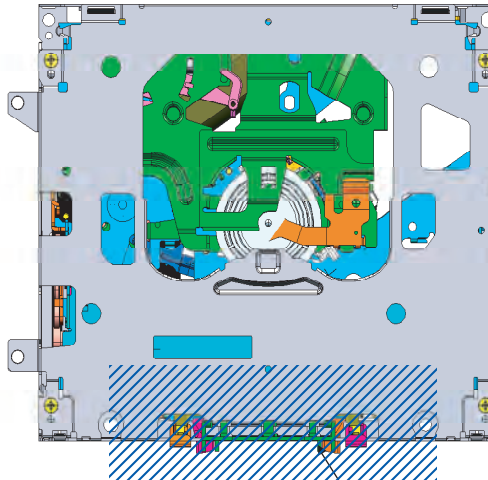
● Eject actions

1. When the Load Carriage Motor is rotated backward, and the pickup is fed to the inner periphery passing the home SW ON point, the eject action will start in the reverse order of the procedure mentioned earlier.
2. For a 12cm-disc, Eject is completed when SW3 is switched OFF, ON, and OFF again.
3. For an 8cm-disc, Eject is completed when SW2 is switched OFF, ON, and OFF again.

3. DISASSEMBLY

● How to hold the Mechanism Unit

1. Hold the Upper and Lower Frames.
2. Do not hold the front portion of the Upper Frame, because it is not very solid.

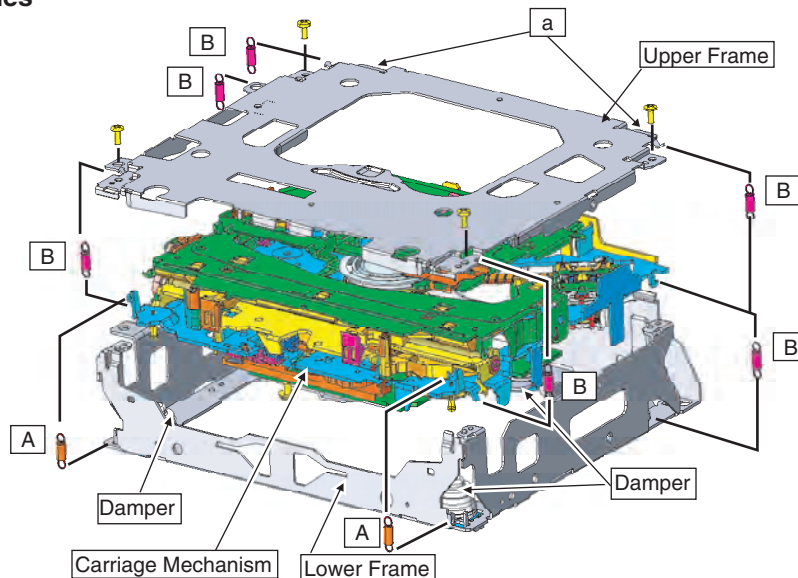


Do not squeeze this area.

● Removing the Upper and Lower Frames

1. With a disc inserted and clamped in the mechanism, remove the two Springs (A), the six Springs (B), and the four Screws.
2. Turn the Upper Frame using the part "a" as a pivot, and remove the Upper Frame.
3. While lifting the Carriage Mechanism, remove it from the three Dampers.

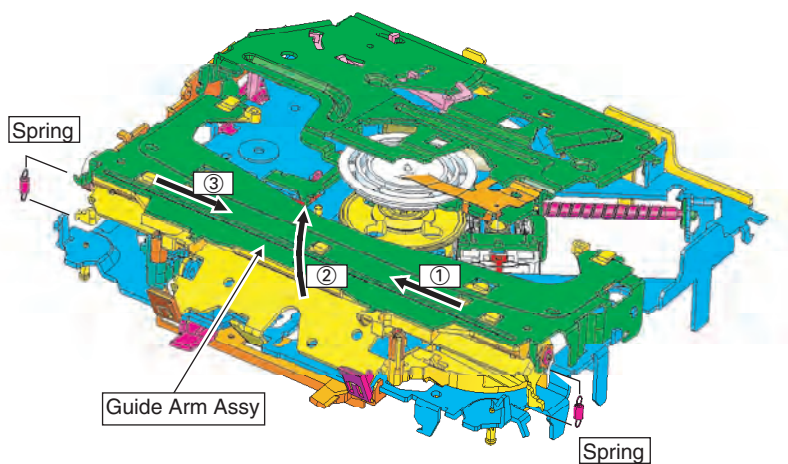
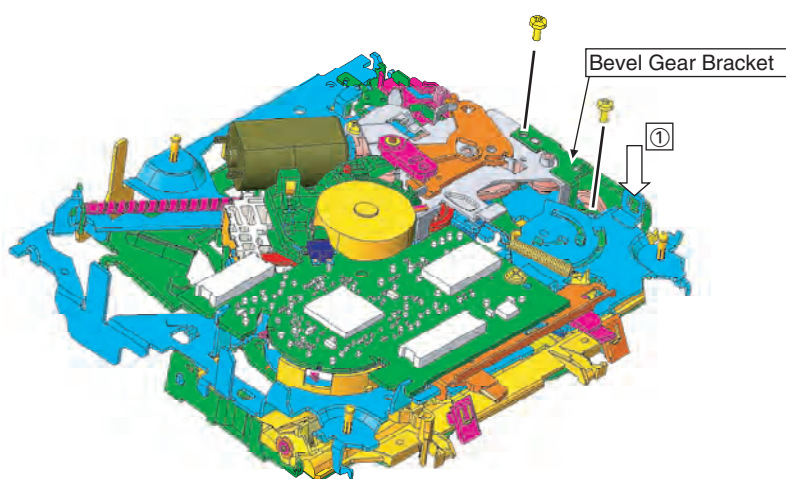
Caution: When assembling, be sure to apply some alcohol to the Dampers and assemble the mechanism in a clamped state.



● Removing the Guide Arm Assy

1. Remove the Upper and Lower Frames and set the mechanism to the eject mode.
2. Remove the two Screws and Bevel Gear Bracket. (Note that the gears will come off.)
3. Remove the two Springs from the left and right sides.
4. Slide the Guide Arm Assy to the left, and turn it upward.
5. When it is turned about 45 degrees, slide it to the right and remove.

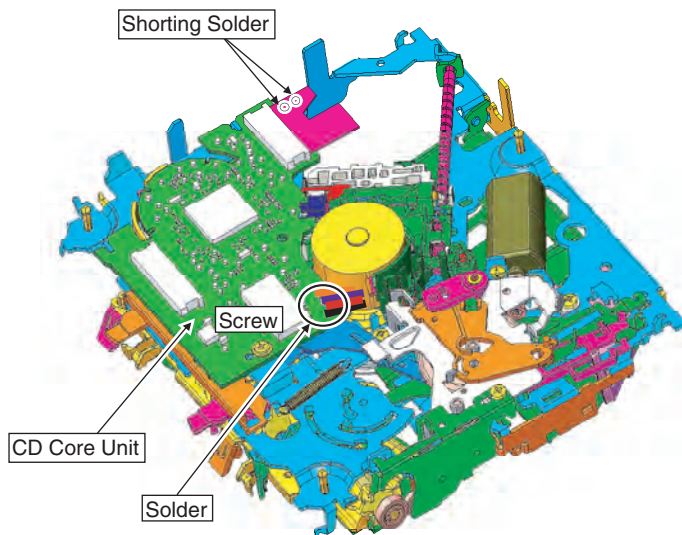
Caution: When assembling, assemble with the Bevel Gear Bracket moved to the direction of the arrow (①).



● How to remove the CD Core Unit

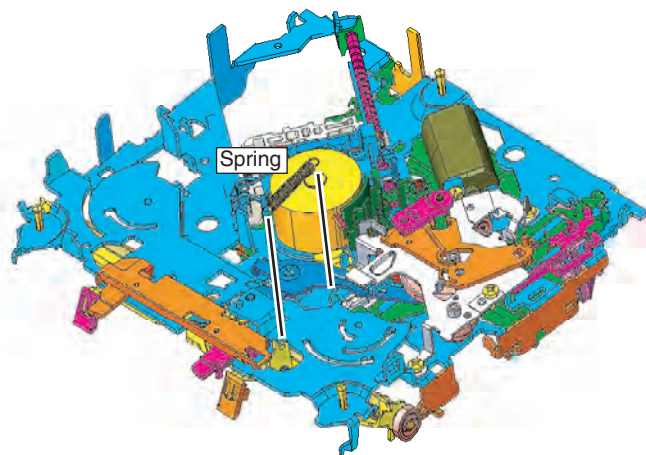
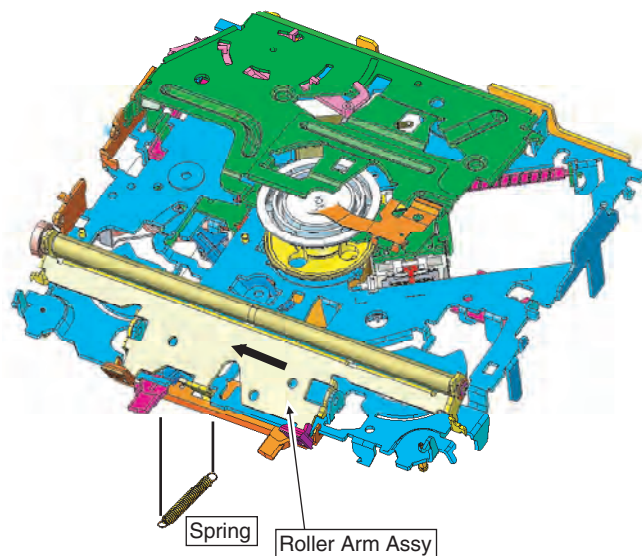
1. Apply Shorting Solder to the flexible cable of the Pickup, and disconnect it from the connector.
2. Unsolder the four leads, and loosen the Screw.
3. Remove the CD Core Unit.

Caution: When assembling the CD Core Unit, assemble it with the SW in a clamped state so as not to damage it.



● How to remove the Roller Arm Assy

1. Remove the Guide Arm Assy.
2. Remove the CD Core Unit. (If the Spring can be removed, the unit need not be removed, depending on the type of CD Core Unit.)
3. Remove the Spring.
4. Slide the Roller Arm Assy to the left.

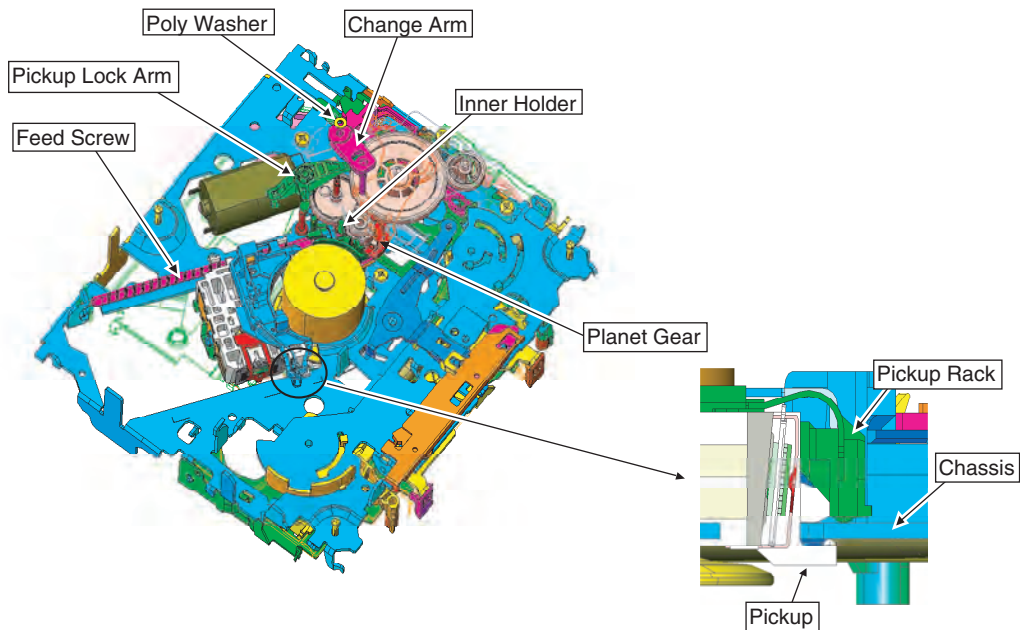


● How to remove the Pickup Unit

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. While releasing from the hook of the Inner Holder, lift the end of the Feed Screw.

Caution: When assembling, move the Planet Gear to the load/eject position before setting the Feed Screw in the Inner Holder.

Assemble the sub unit side of the Pickup, taking the plate (Chassis) in-between. When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.

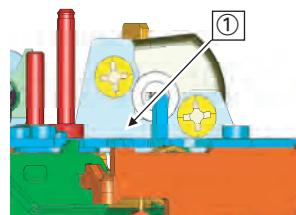
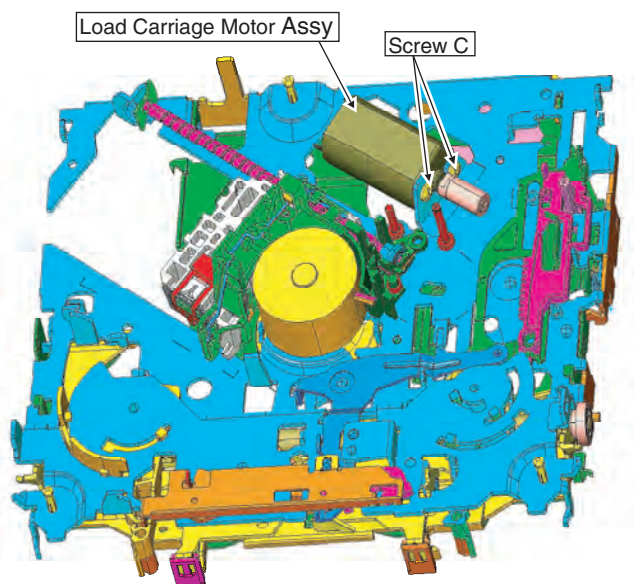
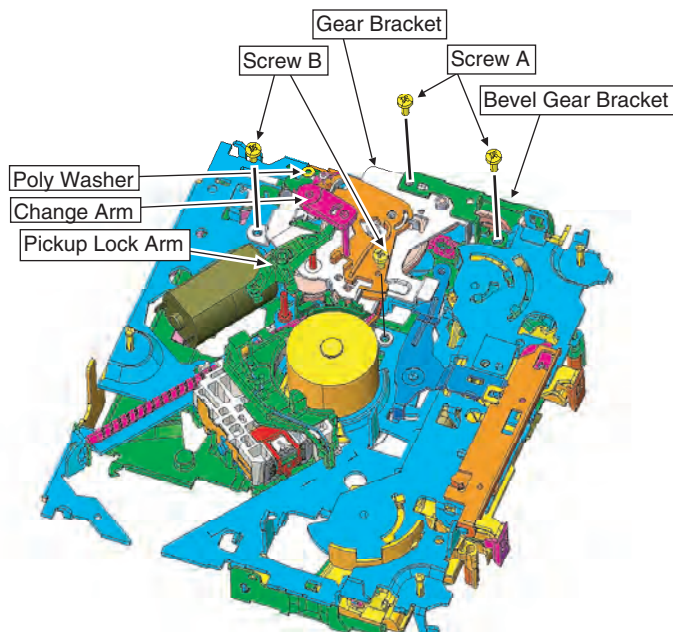


● How to remove the Load Carriage Motor Assy

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Release the leads (orange and purple) of Load Carriage Motor Assy from the CD Core Unit and remove the holder.
3. Remove the Poly Washer, Change Arm, and Pickup Lock Arm.
4. Remove the two Screws (A) and the Bevel Gear Bracket (Note that the gears will come off).
5. Remove the two Screws (B) and the Gear Bracket (remove the CD Core Unit, if necessary), and remove all the gears.
6. Remove the two Screws (C) and the Load Carriage Motor Assy.

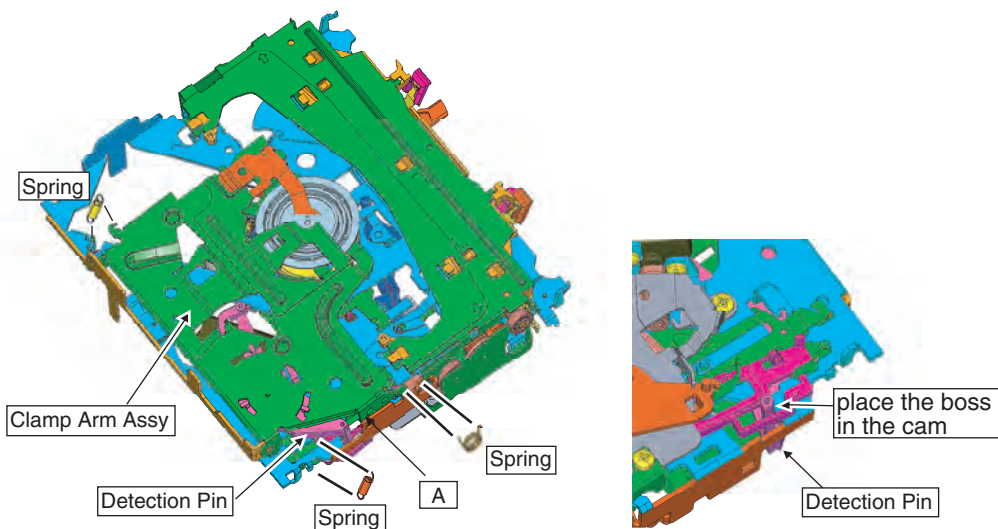
Caution: When assembling the Load Carriage Motor Assy, move it to the direction shown in the illustration (①).

When treating the leads of the Load Carriage Motor Assy, do not make them loose over the Feed Screw.



● How to remove the Clamp Arm Assy

1. Make the system in the carriage mechanism mode, and set the mechanism to the eject mode.
 2. Remove the three Springs.
 3. While pressing the position A, turn the Clamp Arm Assy upward, slide it to the left, and remove.
- Caution: When assembling, place the boss of the Detection Pin in the cam unit of the Loading Rack.



● How to remove the Spindle Motor Assy

1. Make the system in the carriage mechanism mode, and have it clamped.
2. Remove the CD Core Unit and remove the leads from the Inner Holder.
3. Set the mechanism to the eject mode and remove the Clamp Arm Assy.
4. Set the mechanism to the clamped and move the Pickup to circumference.
5. Remove the two Screws, and remove the Spindle Motor Assy.

